Raytheon

UNITED STATES ANTARCTIC PROGRAM

National Science Foundation
Contract OPP 0000373

Report on the FY 2001
USAP Research Support Facilities Survey
Vol. I – Narrative, Figures, and Tables 1, 3-12

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December 11, 2001

National Science Foundation
Office of Polar Programs
4201 Wilson Boulevard, Suite 755S
Arlington, VA 22230

Attention: Dr. Harry Mahar

Subject: **REPORT ON FY 2001 USAP RESEARCH SUPPORT FACILITIES SURVEY**

Dear Dr. Mahar,

Raytheon Polar Services Company forwards the subject report, which consists of two volumes: Volume I "Narrative, Figures, and Tables 1, 3-12" and Volume II "Table 2 Master Report of Survey Responses" (published in hard copy format and distributed to you only under separate cover). The report reflects 95 responses of 199 total science projects, which is a 48% response rate.

RPSC will post and maintain this report on the RPSC web site: (http://www.polar.org/usapserv/index.htm), minus Table 2.

Questions and comments concerning this document should be referred to Dr. Steven T. Kottmeier at 800.688.8606 ext. 5510.

Sincerely,

RAYTHEON TECHNICAL SERVICES COMPANY

Steven T. Kottmeier, Ph.D.
Director, Performance Assurance/
Quality Assurance, Polar Services

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REPORT ON FY 2001 USAP RESEARCH SUPPORT FACILITIES SURVEY

INTRODUCTION

This is a report on the FY 2001 U.S. Antarctic Program (USAP) Research Support Facilities Survey (FY 2001 GPRA Survey), a performance survey that provides data for the National Science Foundation (NSF), Office of Polar Programs (OPP), to respond to the NSF FY 2001 Performance Plan (see the NSF web site: http://www.nsf.gov/od/gpra/). The survey covers the USAP facilities (the three research stations at McMurdo, Palmer, and South Pole, field camps, two research icebreakers (R/V LAURENCE M. GOULD and R/V NATHANIEL B. PALMER), and one U.S. Coast Guard icebreaker (USCGC POLAR SEA), which support cutting-edge research in Antarctica. Results of the survey are an important indication of productive and unproductive days experienced by 95 science projects in Antarctica during FY 2001. The results are compared to the results of 150 and 135 projects responding respectively to the FY 1999 and FY 2000 surveys (see the RPSC web site: http://www.polar.org/usapserv/index.htm). The survey identifies processes that are within the control of USAP facilities, which can be managed better to reduce the unproductive time and increase the productive time of science projects, and hence the throughput of scientific research in Antarctica.

METHODS

The FY 2001 GPRA Survey was developed as a one page, web site-based form by the Raytheon Polar Services Company (RPSC) Director, Performance Assurance/Quality Assurance (PA/QA) and NSF/OPP Safety and Health Officer (Fig. 1). The Science Projects, Principal Investigators (PIs), and Project Planned Days were determined from the United States Antarctic Program 2000-2001 Science Planning Summary and information provided by the RPSC Science Support Division (Table 1). The PIs and Field Team Leaders were informed by an electronic (e-mail) message from the RPSC Director, PA/QA, in October 2000 that the survey was available on the RPSC web site in three formats: Excel, HTML, and text. The survey included an accompanying one page welcome from the RPSC Director, PA/QA (Fig. 2A). It also included a one page letter from the NSF/OPP Safety and Health Officer explaining the GPRA as it applies to the NSF/OPP, with instruction and encouragement to PIs and Field Team Leaders to complete the survey form (Fig. 2B). The survey was designed to be completed easily by PIs and Field Team Leaders using data collected during their projects' deployment to Antarctica. Hardcopies of the survey form and accompanying letter of explanation and instruction were also distributed to PIs and Field Team Leaders during their science project in-briefings and out-briefings in Antarctica. A significant percentage of surveys were completed electronically and sent via e-mail to the RPSC Director, PA/QA. The RPSC Science Support staff collected numerous hardcopy surveys from PIs and Field Team Leaders during science project out-briefings in Antarctica. All science projects were reminded late in FY 2001 to complete and submit their surveys soon after the completion of their work in FY 2001.

These methods resulted in a significantly fewer number of completed surveys for FY 2001 than the goal of 100% expected by the NSF/OPP and RPSC. Reminder messages and telephone calls were used by the RPSC Director, PA/QA, and NSF/OPP Science Program Managers, to encourage PIs and Field Team Leaders, who failed to respond to respond.

Completed survey forms were date stamped by RPSC and "working photocopies" made for recording analyses of the responses prior to inputting the data into a master Access database. The original completed surveys and working photocopies are files in the Director, PA/QA, office at RPSC Headquarters. Survey responses were entered into a master, Access database (Table 2), which contains the data fields of the survey. This allowed for accurate sorting into custom and summary reports, and graphical presentation of the results. The results that follow represent 95 science project responses to the FY 2001 GPRA Survey received by RPSC through 16 November 2001.

RESULTS AND DISCUSSION

A total of 95 of 199 science projects completed and submitted the survey for a 48% response rate (Table 3). Other Facilities failed to responded for 0% response rate, but accounted for < 1% of the 48% total response. All Multiple Stations responded for a 100% response rate, but accounted for only 2% of the 48% total response.

The 48% response rate for the FY 2001 GPRA survey was significantly poorer than the 86% and 73% response rates reported respectively by the FY 1999 and FY 2000 surveys. Science projects at all facilities except Multiple Stations, responded less than reported in the FY 1999 and FY 2000 surveys. This trend is disappointing given that this is the second year that the survey was posted on the RPSC web site for completion, which science projects recommended in the FY 1999 survey would improve the survey and their response to it.

The 95 responding science projects comprised 429 scientists, with 8,391 Total Project Days (Table 4a). This response is significantly lower than the total 199 (100%) projects comprising 822 scientists, with 20,981 Planned Project Days (Table 1).

The 95 responding science projects experienced an average of 88 Total Project Days (81 Productive Days and 7 Unproductive Days). This is significantly less than the FY 1999 survey average (104 Total Project Days from 92 Productive Days and 12 Unproductive Days), but significantly more than the FY 2000 average (74 Total Project Days from 64 Productive Days and 10 Unproductive Days). When Bad Weather Days (319 days accounting for 46% of Total Unproductive Days) (Tables 4a and 5) are removed, Total Project Days reduced to 8,072 (Table 4b). On average each science project experienced 85 Total Project Days (81 Productive Days and 4 Unproductive Days). This is significantly less than the FY 1999 survey average (100 Total Project Days from 92 Productive Days and 8 Unproductive Days), but significantly more than the FY 2000 survey average (69 Total Project Days from 64 Productive Days and 5 Unproductive Days).

Bad Weather Days accounted for the largest percentage (46%) of Unproductive Time (Table 5). This is significantly higher than the 36% Unproductive Time attributed to Bad Weather Days reported in the FY 1999 survey and lower than the 48% in the FY 2000 survey. Bad Weather Days contributed to the majority of the unproductive time only at McMurdo Station (66%) (Table 6). Although this is comparable to survey results reported for McMurdo Station in FY 1999 (43%) and FY 2000 (64%), Bad Weather was the leading cause of unproductive time for several facilities in both years. Bad Weather Days, while never unexpected in Antarctica, are not within USAP facility control and were removed from the more detailed analysis that follows.

Productive Time accounted for 92% of and Unproductive Time accounted for 8% of Total Project Time (Fig. 3). This is significantly more productive time and less unproductive time than experienced in the FY 1999 (89% productive, 11% unproductive) and FY 2000 (85% productive, 15% unproductive). When Bad Weather Days are removed from the Total Project Time, Productive Time increased to 95% and Unproductive Time decreased to 5% (Fig. 4). This is significantly more than the 92% Productive Time and less than the 8% Unproductive Time reported by the FY 1999 and FY 2000 surveys.

In contrast to FY 1999 and FY 2000, Productive Time and Unproductive time did not vary considerably among the USAP facilities. The least Productive Time was observed aboard the R/V LAURENCE M. GOULD (LMG) at 89% and the most aboard the USCGC Icebreaker at 100% (with only 1 of 2 projects responding). The LMG accounted for 8% of the Total Productive Days and 21% of the Total Unproductive Days, while the USCGC Icebreaker accounted for < 1% of the Total Productive and Unproductive Days (Figs. 5-7 and Table 7). The remaining USAP facilities exhibited 92-97% Productive Time and 3-8% Unproductive Time. These results suggest that most USAP facilities are productive antarctic research environments, but have some areas where improvements in facility support will reduce unproductive time and enhance research throughput for science projects.

The sum of Bad Weather Days (46%), Other Circumstances (24%), and Delays in Transportation (10%), accounted for 80% of Unproductive Time (Table 5). The sum of these causes of unproductive time in the FY 1999 survey accounted for 67% of Unproductive Time and in the FY 2000 survey for 84%.

When Bad Weather Days are removed, then Other Circumstances (45%), Delays in Transportation (18%), and Unavailability of Cryogenic Materials (14%) accounted for 77% of Corrected Total Unproductive Time (Table 5).

Other Circumstances accounted for 45% of the Total Corrected Unproductive Time (Table 5). This result is significantly larger than the FY 1999 survey (29%) and comparable to the FY 2000 survey (47%). Thirteen different Other Circumstances caused unproductive days, ranging from Research Vessel Cruise Schedule (69 days lost) to Research Vessel Refueling (1 day lost) (Fig. 8). Two of the thirteen Other

Circumstances resulted in 34-69 days lost; three resulted in 11-13 days lost; and eight resulted in 1-8 days lost. Most Other Circumstances are within USAP facility control and can be reduced/eliminated/planned for to reduce the loss of productive time.

The leading Other Circumstance of unproductive time among the stations was either Research Vessel Cruise Schedule or Power Outages: McMurdo Station – power outages (22 days lost, Fig. 9), Palmer Station – cruise schedule (10 days lost, Fig. 10), R/V LAURENCE M. GOULD – cruise schedule (32 days lost, Fig. 11), R/V NATHANIEL B. PALMER – cruise schedule (19 days lost, Fig. 12), R/V, Field Camps – cruise schedule (8 days lost, Fig. 13), and South Pole Station – power outages (12 days lost, Fig. 14). These results are significantly different from the results reported in the FY 1999/FY 2000 surveys, where the leading Other Circumstance varied among all of the research facilities. These results suggest that the variability in Other Circumstances causes declined significantly at all of the USAP research facilities during FY 2001.

Delays in Transportation accounted for 18% of the Total Corrected Unproductive Time (Table 5). This result is comparable to the 19% reported in the FY 1999 survey and significantly less than the 33% reported in the FY 2000 survey. Delays in Transportation did not account for the majority of the unproductive time experienced at any USAP research facility. These results are significantly different from the results reported in the FY 1999/FY 2000 surveys, where Delays in Transportation accounted for the majority of the unproductive time experienced at Other Facilities (100%/100%) and McMurdo Station (44%/56%). These results suggest that transportation delays improved significantly at all of the USAP research facilities during FY 2001.

Air Transportation accounted for 59% of transportation difficulties contributing to unproductive time, while Research Vessel Transportation accounted for 26% and Surface Transportation accounted for 15% (Fig. 15). These results are significantly different from the results reported in the FY 1999/FY 2000 surveys, where Air Transportation (90%/85%) accounted for a greater proportion, and Research Vessel Transportation (9%/13%) and Surface Transportation (1%/2%) a lesser proportion of the transportation difficulties. These results suggest that Air Transportation improved significantly during FY 2001.

Effectiveness of Planning (actual vs. planned performance) resulted in a total of 183 days lost, an average of 2 total days lost per project (Tables 4c and 8). These results are significantly different than those derived from Science Project Planned Days for FY 2001 (Table 1), where 2018 total days were lost (project reported vs. project planned), for an average of 21 days per project. This suggests a significant difference between the NSF and RPSC project planning information and that reported by the projects in the GPRA survey. The FY 2001 survey results are a significant improvement over the results from the FY 1999/FY2000 surveys, which reported 640/772 total days lost for an average of 4/6 total days lost per project. McMurdo Station projects experienced the greatest number of days lost (64 days) (Table 4c and Fig. 16), averaging 2 days lost per project (Table 8). This is significantly fewer days lost than reported for McMurdo Station in the FY 1999/FY 2000 surveys (470 days for 6 days lost per project/338 days for 5 days lost

per project). South Pole Station projects experienced the greatest days lost per project (4 days), but fewer than reported in the FY 2000 survey (13 days). Palmer Station projects experienced 11 days gained per project, which is a significant improvement over the FY 1999 survey when Palmer Station projects experienced the greatest days lost per project (16 days). These results suggest that science projects are planning significantly better than reported in the FY 1999 and FY 2000 surveys.

Transit to Antarctica, Transit to the Field, and Experiment Data Collection accounted for the greatest loss of days versus plans (Fig. 17). Bad Weather Days can contribute significantly to Transit to Antarctica and the Field. The results are comparable to the results of the FY 1999 and FY 2000 surveys, when Transit to Antarctica and Experiment Data Collection accounted for the greatest loss of days versus plans. Transit to Antarctica accounted for the greatest loss of days (43% = 90 days lost or an average of 1 day lost per project) (Fig. 17 and Table 4c). This is comparable (but one-half the average time lost) to the results from FY 1999 survey, where Transit to Antarctica accounted for the greatest loss of days (42% = 273 days lost or an average of 2 days lost per project). Transit to the Field and Experiment Data Collection tied for the second greatest number of days lost (15% = 32 days lost or an average of 0.34 day lost per project) (Fig. 17 and Table 4c). These results suggest the three processes could be planned and executed better.

Transit from the Field and Antarctica accounted for the least number of days lost (3% = 6 days lost and 0% = 1 day lost, for averages close to 0 days lost per project) (Fig. 17 and Table 4c). These results suggest that these processes are planned and executed well, with Bad Weather Days having an insignificant impact.

Rating of Support Provided Your Project resulted in 97% satisfactory plus good and excellent ratings and 3% unsatisfactory and poor ratings (Fig. 18 and Table 9). These results are comparable to those reported in the FY 1999/FY 2000 surveys, which reported satisfactory plus excellent ratings compared to unsatisfactory ratings. In FY 1999, 96% reported satisfactory plus excellent compared to 4% unsatisfactory. In FY 2000, 98% reported satisfactory plus excellent compared to 2% unsatisfactory. These results in total suggest that science projects were equally satisfied with their support in FY 2001 as FY 1999 and FY 2000.

Design of the Survey Captured Facility Support of Your Project, resulted in evaluations of 71% Yes, 22 % No, and 7% Not Answered (Fig. 19 and Table 10). These results are quite similar to those reported in the FY 1999 and FY 2000 surveys (69%, 27%, and 4%, and 70%, 26 %, and 4% respectively). R/V LAURENCE M. GOULD (100%), USCG Icebreaker (100%), South Pole Station (92%), and McMurdo Station (79%) accounted for the greatest affirmation of the survey design (Table 10). Multiple Stations (0%), Other (0%), and R/V/Field Camps (0%) accounted for the least affirmation of the design. These results suggest that while the majority of responding scientists were pleased with the design of the third year survey form, some improvements are needed. Suggestions for improving the design of the survey (Table 11) were reviewed and considered in the revision for FY 2002 (Fig. 20).

Many responding scientists provided additional comments related to the support they received. These comments are provided (Table 12) for review by supporting USAP work centers for potential corrective actions.

TOP TEN RPSC RECOMMENDATIONS FOR IMPROVING THE SURVEY FOR FY 2002

RPSC recommends the following improvements to the GPRA survey, based on its experience administering the survey in FY 2001:

1. Communicate early with the PIs and Field Team Leaders regarding the intent of the survey, and communicate regularly via the RPSC web site, e-mail messages, faxes, and telephone.
2. Reinforce completion of the survey during in-briefs and out-briefs of science projects in Antarctica. Collect as many completed surveys in Antarctica before science projects depart.
3. Investigate incentivizing completion of the survey, e.g. give Antarctic souvenirs to projects responding within 30 days of the completion of their research in Antarctica.
4. Continue partnering with RPSC Science Users Committees (ARVOC, MAUC, PAUC, and SPUC) to encourage completion of the survey by the scientific communities they represent.
5. Work closely with the Program Managers in the NSF/OPP Polar Research Support Section and Antarctic Science Section, to encourage response by all science projects.
6. Follow up with scientists that fail to respond within 30 days of the completion of their project in Antarctica.
7. Continue to summarize the results of the completed survey to the responding scientists, RPSC Users Committees, RPSC and other USAP organizations, and the NSF/OPP, on the RPSC web site and at meetings.
8. Revise the survey incorporating feedback from the respondents, the NSF/OPP, and RPSC.
9. Make completion of the survey a deliverable requirement of every NSF/OPP funded science project, and communicate that requirement clearly, beginning with guidelines on preparation of proposals.
10. Continue to track and report survey trends year-to-year.

ACKNOWLEDGEMENTS

This survey was supported by the National Science Foundation Contract OPP 0000373 to Raytheon Technical Services Company, Polar Services. Many thanks to the 95 PIs and Field Team Leaders that participated in the survey this third year, for without their participation the survey would not have been possible. I thank the NSF/OPP Polar Research Support Section and Antarctic Science Program Managers for encouraging the PIs and Field Team Leaders to complete the survey. I appreciate the collaboration of Dr. Harry Mahar, NSF/OPP Safety and Health Officer, in the design of the survey and discussion of the survey preliminary results. My discussions of the survey and its results versus "Planned Days" with Ms. Altie Metcalf, NSF/OPP Budget and Planning Officer, were invaluable. I value the on-going discussions of the results and suggestions for improvement of the survey with the four RPSC Science Users Committees. Ms. Sheral Holley posted the FY 2001 and FY 2002 survey forms and the final report of the FY 2001 survey on the RPSC web site. Last, I am indebted to Ms. Celeste Dowell, RPSC Database Auditor, for her tireless entry of survey response data and preparation of various figures and tables, which made this report possible.

INDEX OF FIGURES AND TABLES

INDEX OF FIGURES AND TABLES (contd).

Event Number _____

FY 2001 USAP RESEARCH SUPPORT FACILITIES SURVEY

INSTRUCTIONS: This survey is designed to collect information regarding research support facilities in the United States Antarctic Program (USAP), for use by NSF/OPP in its annual performance plan report for the Government Performance and Results Act (GPRA). Each project Principal Investigator (PI) or Field Team Leader should **complete and return a separate survey for each facility, regardless of whether your project deployed to Antarctica during FY 2001**. Send your completed survey(s) via e-mail to: GPRA2001@polar.org. Contact the Raytheon Polar Services Company, Director, Performance Assurance/Quality Assurance (kottmest@polar.org, 800/688-8606, ext. 3108) with any questions.

1) PROJECT INFORMATION

A) Event number 0
B) Principal Investigator (PI) _____
C) Field Team Leader (if different from PI) _____
D) List All Deploying Members of the Project Field Team (Include PI and Field Team Leader as applicable.)

_____ _____ _____ _____
_____ _____ _____ _____

E) USAP Research Support Facility supporting your project
____ McMurdo and field camps ____ Palmer ____ South Pole ____ Research Vessels (LMG or NBP) and ____ USCGC Icebreaker Field Camps
F) Survey Period ____ FY2001-1 (1 Oct 2000 – 31 Mar 2001, 182 total days)
____ FY2001-2 (1 Apr 2001 – 30 Sept 2001, 183 total days)
____ FY2001-F (1 Oct 2000 – 30 Sept 2001, 365 total days)

2) QUALITY TIME IN ANTARCTICA

(Notes: (1) Use elapsed calendar days rather than person-days in your responses.
(2) Include the number of days that technicians of the USAP Support Contractor supported your project.)

A) **Productive time:** Provide an estimate of the total number of productive days your project experienced. ____
B) **Unproductive time:** Provide in spaces 1-7 below estimates of the number of unproductive days your project experienced for specific reasons.
1) Days lost due to delays in cargo …….. ____
2) Days lost due to failure of USAP-provided equipment/instruments …….. ____
3) Days lost due to inadequate laboratory/observatory space ……. ____
4) Days lost due to problems with USAP-provided material (incorrect/insufficient) …… ____
5) Days lost due to unavailability of cryogenic materials ..…… ____
6) Days lost due to unavailability of USAP Support Contractor Science Technician ……..…… ____
7) Days lost due to problems with transportation (not related to bad weather delays):
aircraft ____ research vessel ____ surface vehicle ____ transportation total ____
8) Days lost due to bad weather delays …… ____
9) Days lost due to other circumstances (please specify) …… ____

_____

_____

10) Subtotal number of unproductive project days (Sum of Lines 2B1-2B9) …….. 0
C) Total number of project days (Line 2A + Line 2B10) …… 0

3) EFFECTIVENESS OF PLANNING

Provide estimates of your project's actual versus planned performance for the following activities. Please use a (-) sign to designate days lost and (+) sign for days gained. Record (0) for no days lost and (NA) for not applicable. For example, if you planned 5 days for transit to Antarctica and it required 7 days, then record (-2).

1) Days in transit to Antarctica ____
2) Days for field training ____
3) Days for field testing/set-up ____
4) Days in transit to field ____
5) Days for experimentation and data collection ____
6) Down days planned ____
7) Days for packing up ____
8) Days in transit from field ____
9) Days in transit from Antarctica ____
10) Total Days Lost or Gained (Sum of Lines 1-9) 0

4) OVERALL ASSESSMENT

A) Rate the support provided your project.
Unsatisfactory ____ Poor ____ Satisfactory ____ Good ____ Excellent ____
B) Considering your responses, does this survey capture the way in which the USAP Research Support Facility (see 1.E.) supported your project?
Yes ____ No ____
If No, then please suggest on a separate page how the survey might be improved to better capture your support.
C) On a separate page describe any specific support difficulties your project encountered and suggested solutions.

Figure 1 FY 2001 USAP Research Support Facilities Survey Form

WELCOME TO THE GPRA SURVEY FOR FY 2001

The following three applications comprise the USAP Research Support Facilities Survey (GPRA Survey) for FY 2001. At the present time, only these versions of the GPRA FY 2001 survey are offered, but others will be developed as the web site (www.polar.org) allows.

The first application is the GPRA Survey form in Microsoft Excel spreadsheet format. If you are a Microsoft Excel user, then download this application and use the tab and cursor arrow keys to move around the survey to complete it. Once your survey is completed electronically, then please send it as an e-mail message attachment to the e-mail address: GPRA2001@polar.org.

The second application is the GPRA Survey form in HTML format. You will need to print out a hard copy from the HTML format to complete the survey.

The third application is the GPRA Survey form in Text format. You can either download this application to complete the survey electronically or print out a hard copy to complete the survey. If you decide to complete it electronically, then ensure that your Insert Key is on and replace the lined blanks with your responses. Once your survey is completed electronically, then please send it as an e-mail message attachment to the e-mail address: GPRA2001@polar.org.

If you complete a hard copy of the survey, then please fax or mail it to:

Director, Performance/Quality Assurance
Raytheon Polar Services Company
61 Inverness Drive East, Suite 300
Englewood, CO 80112
Fax: 303/790-9130

Thank you in advance for your participation in the GPRA survey for FY 2001. Please request any further information required by contacting me:

Steve Kottmeier, Ph.D.
RPSC Director, Performance/Quality Assurance
E-mail: kottmest@polar.org
Phone: 800/688-8606, ext. 3108
Fax: 303/790-9130

Figure 2a Welcome to the FY 2001 USAP Research Support Facilities Survey

13 October 2000

Dear Principal Investigator or Field Team Leader,

Subject: **NSF and the Government Performance and Results Act for FY 2001**

As part of NSF's response to the Government Performance and Results Act (GPRA), NSF has prepared a Performance Plan for FY 2001 (February 2000, see **http://www.nsf.gov/od/gpra/**). The support of facilities is a significant portion of the NSF's budget. The performance plan highlights two goals for NSF's Facilities Oversight. The first goal is that major facility construction or upgrades should be completed:

1.) within annual expenditure plan
2.) within annual schedule
3.) for construction and upgrades after 1996, within 110% of estimates at initiation of construction

The second goal is that facilities provide support to cutting-edge research, and do so in a reliable manner.

The entire Office of Polar Program's, Polar Research Support Section (OPP/PRSS) budget is counted as supporting USAP facilities. The total NSF FY 2001 Budget Estimate for Research Facilities is $1,044.83 million, of which PRSS request is $184.38 million. PRSS has separated its program into four primary facilities:

McMurdo – including nearly all the large and small field camps
Palmer,
South Pole, and
Research Vessels – including small field camps deployed/recovered by research vessels

The specific language in the FY 2001 Performance Plan concerning Operations and Management of Facilities is:

> Facilities must operate efficiently and reliably and must offer appropriate opportunities, if they are to be valuable to those they serve. NSF program officers work closely with facilities' directors to ensure that facilities have appropriate resources to conduct operations and to provide maintenance that ensures reliable operations.

Performance Goal: Keep operating time lost due to unscheduled downtime to less than 10 percent of the total scheduled operating time.

> Performance is measured as the average percentage among all facilities of full capacity "user units" lost during the year to breakdowns or other circumstances considered within the control of the facilities. The average across facilities is used in this instance because, although there should be latitude for some facilities to be run at greater failure rates with good reason, those facilities should be balanced by others operating more reliably. User units are defined separately for each facility, and are typically user-hours or something similar.

OPP has determined that a workable definition of a user unit for USAP is a project observing day, or project-days. For a South Pole observatory, this might be 365 days per year after the instrument is installed, or just when it is dark, approximately 180 days. For a cruise, we would expect that the cruise length is synonymous with the number of project days, even though we recognize that the vessel usually needs time to reach its work area.

OPP intends that the data requested in the following performance survey are easy for you to collect and also accurately reflect your experience in Antarctica. OPP encourages you to complete the survey during your field season in Antarctica or as soon after its completion as possible. We have established the website for such reporting http://www.polar.org/usapserv/gpra2001 and encourage you to file your report electronically. Periodically, OPP will post results from this survey, so you have an indication of the performance of the overall program.

Thank you for your participation.

Harry Mahar, Ph.D.
NSF/OPP Science GPRA Coordinator

Figure 2b Cover Letter to FY 2001 USAP Research Support Facilities Survey

FY 2001
USAP Research Support Facilities Survey
Productive vs. Unproductive Days

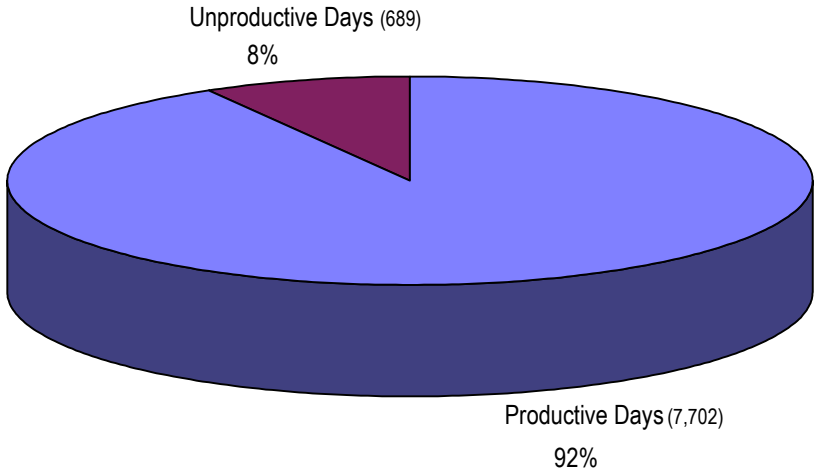

Figure 3: Productive Days vs. Unproductive Days

FY 2001
USAP Research Support Facilities Survey
Productive vs. Unproductive Days
(Minus Bad Weather Days)

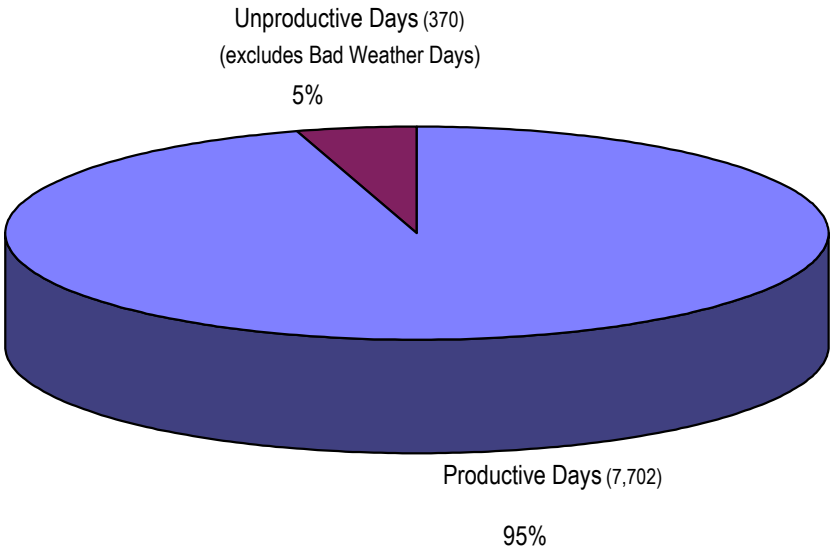

Figure 4: Productive Days vs. Unproductive Days minus Bad Weather Days

FY 2001
USAP Research Support Facilities Survey
Facility Contribution to Total Productive Days

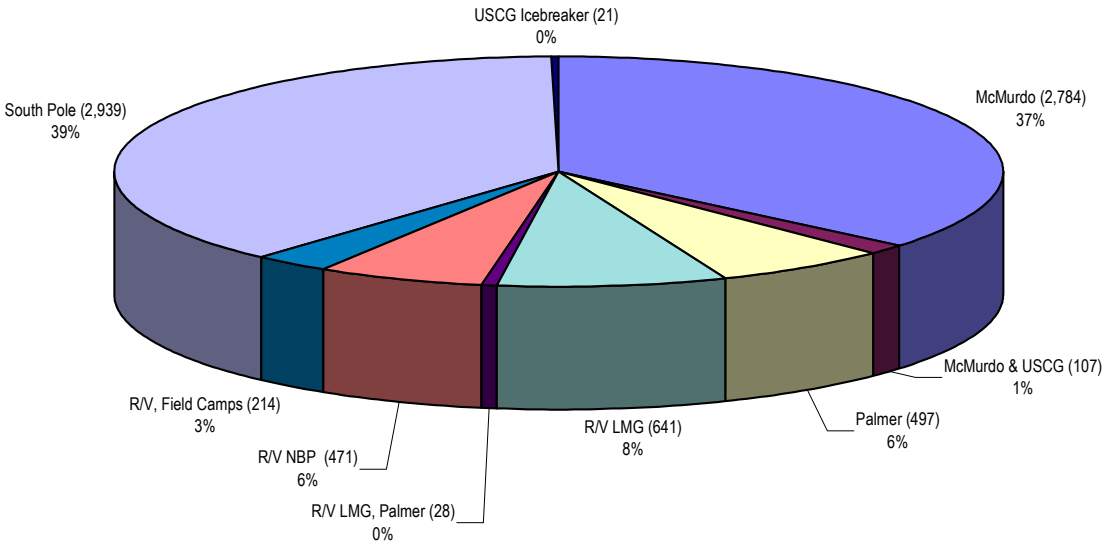

Figure 5: Facility Contribution to Total Productive Days

FY 2001
USAP Research Support Facilities Survey
Facility Contribution to Total Unproductive Days

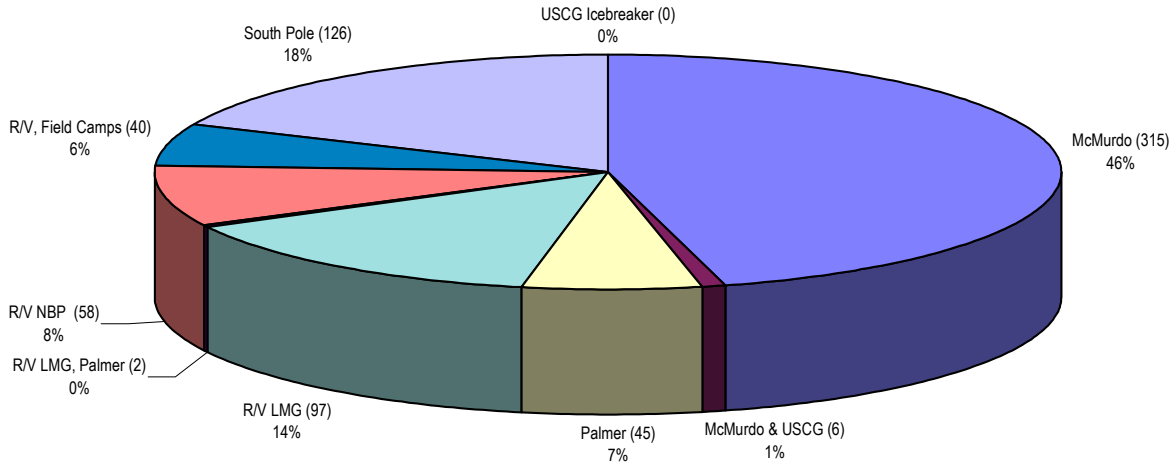

Figure 6: Facility Contribution to Total Unproductive Days

FY 2001
USAP Research Support Facilities Survey
Facility Contribution to Total Unproductive Days
(Minus Bad Weather Days)

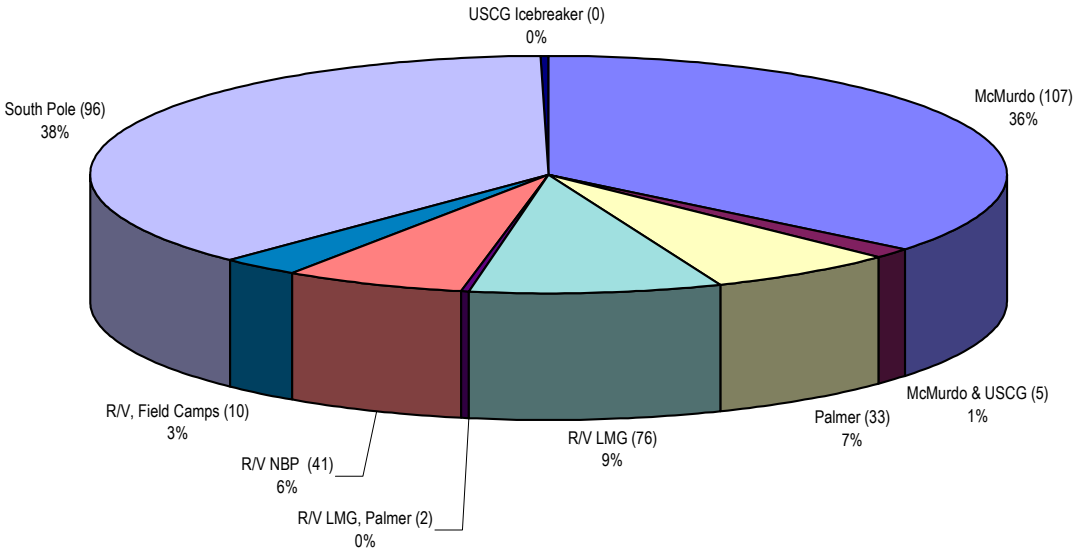

Figure 7: Facility Contribution to Total Unproductive Days minus Bad Weather Days

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

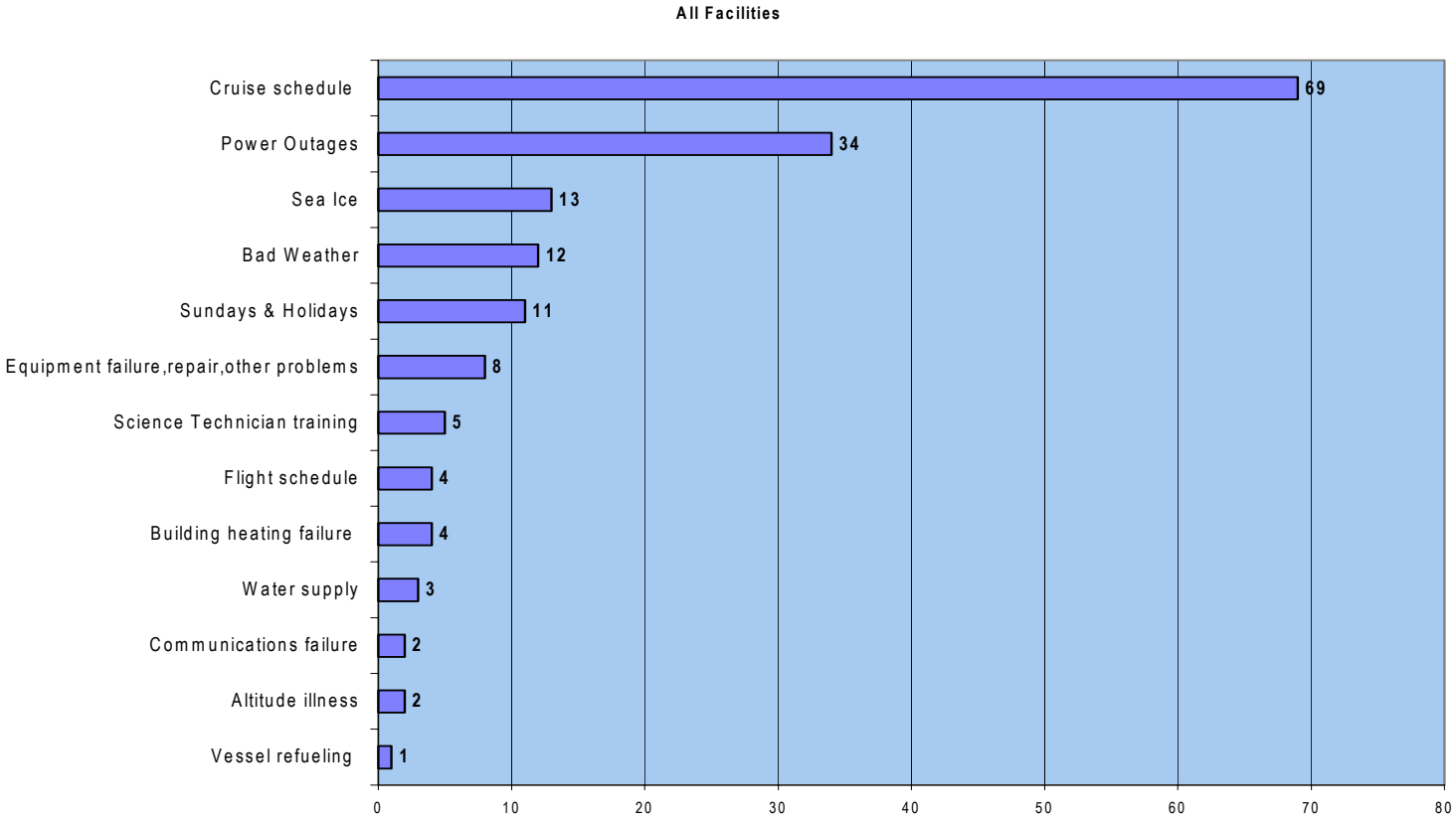

Figure 8: Other Causes of Unproductive Days – All Facilities

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

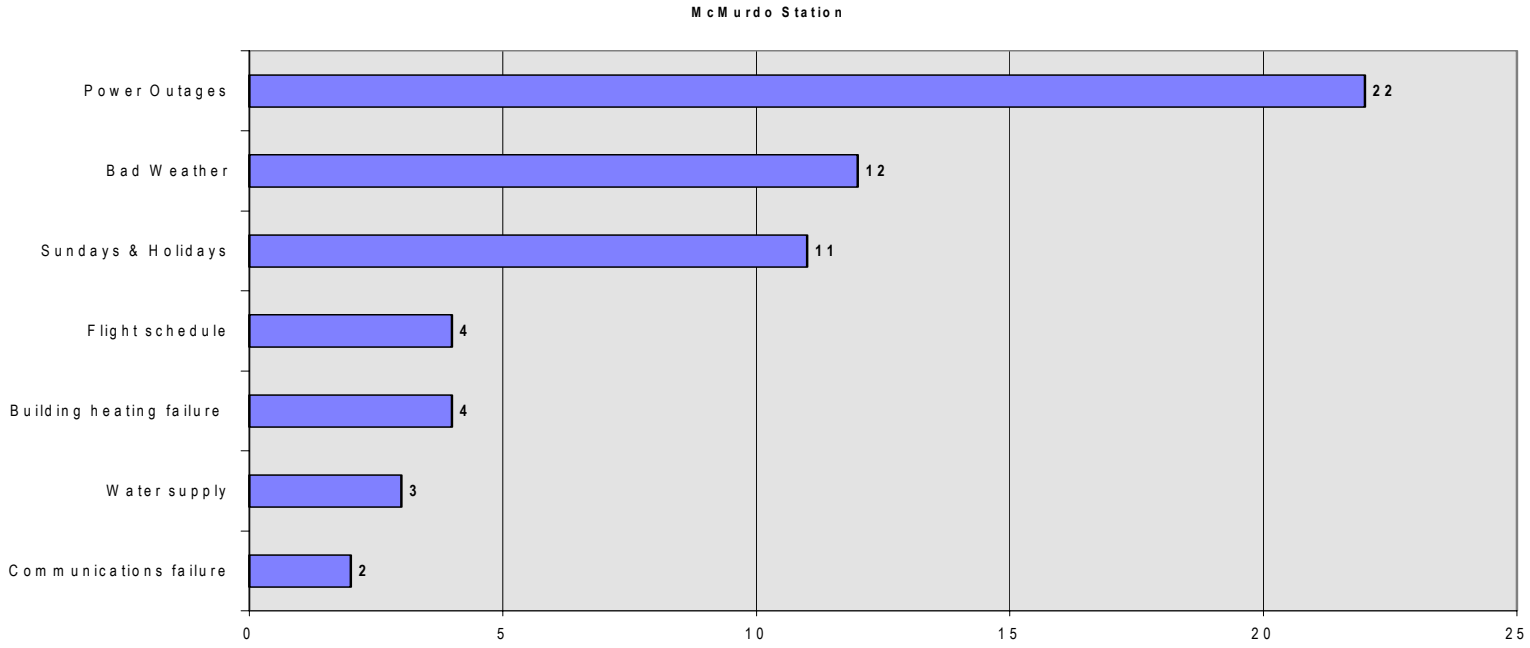

Figure 9: Other Causes of Unproductive Days – McMurdo Station

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

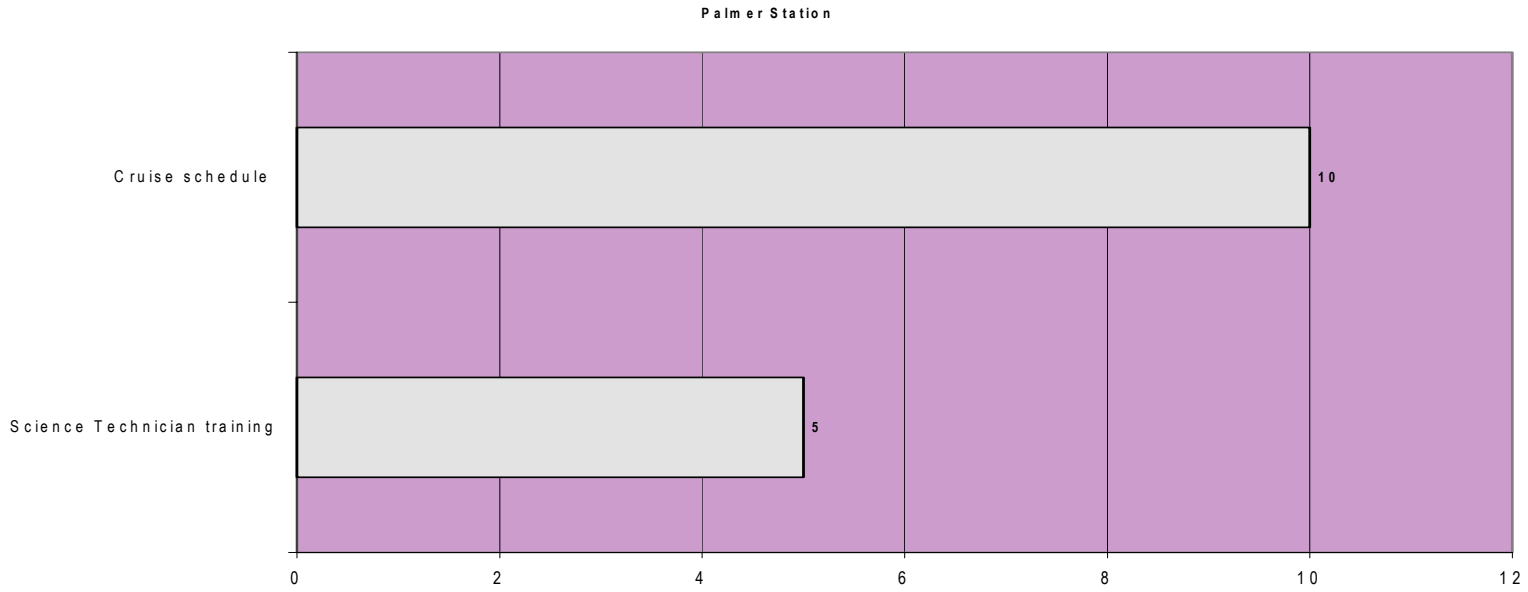

Figure 10: Other Causes of Unproductive Days – Palmer Station

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

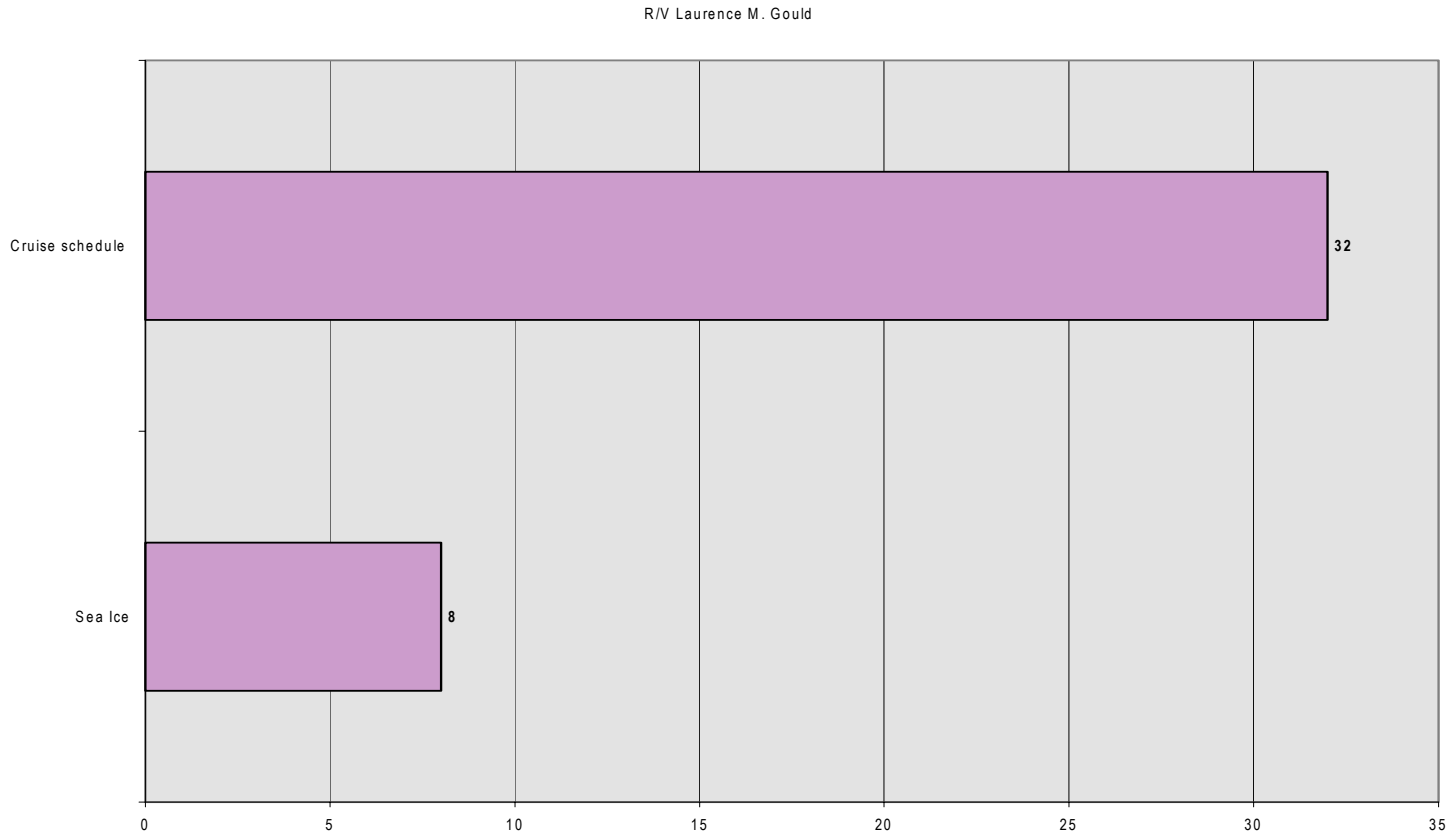

Figure 11: Other Causes of Unproductive Days – R/V Laurence M. Gould

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

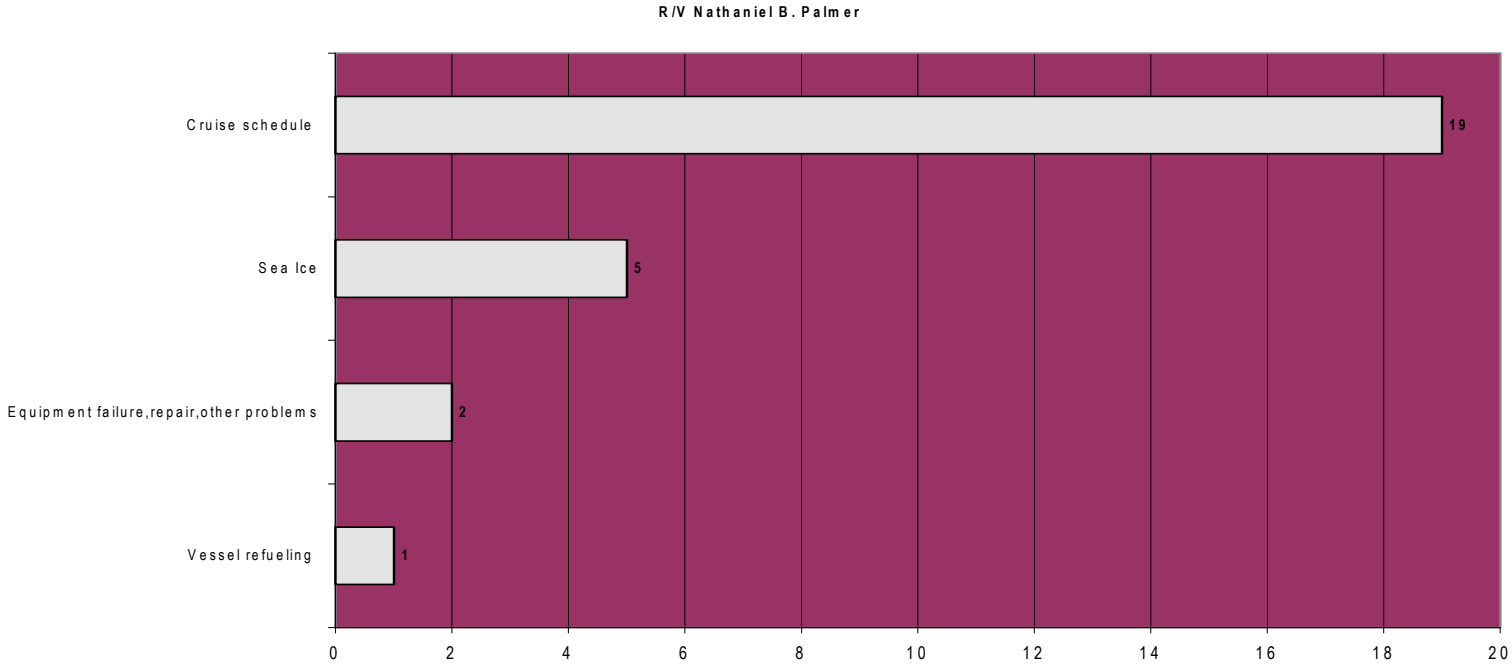

Figure 12: Other Causes of Unproductive Days – R/V Nathaniel B. Palmer

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

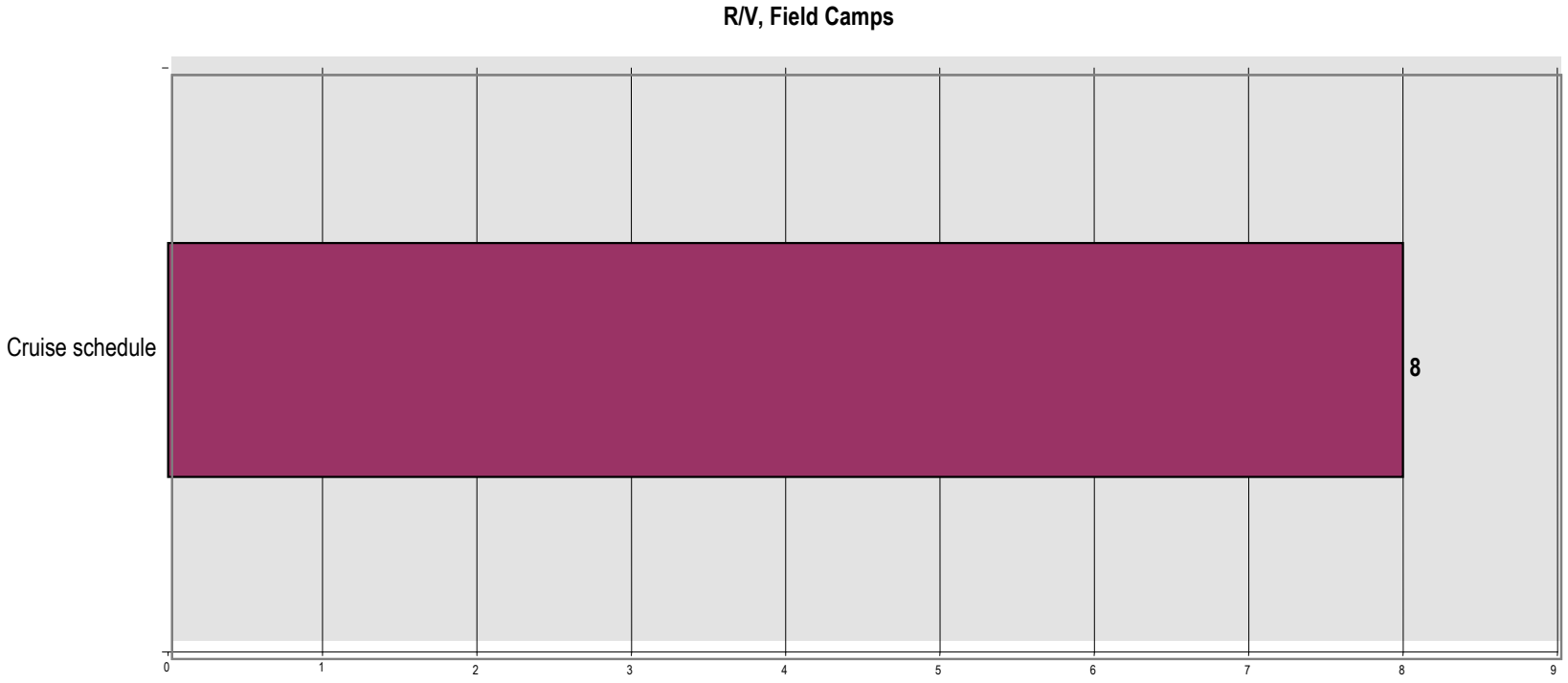

Figure 13: Other Causes of Unproductive Days – R/V, Field Camps

FY 2001
USAP Research Support Facilities Survey
Other Causes of Unproductive Days

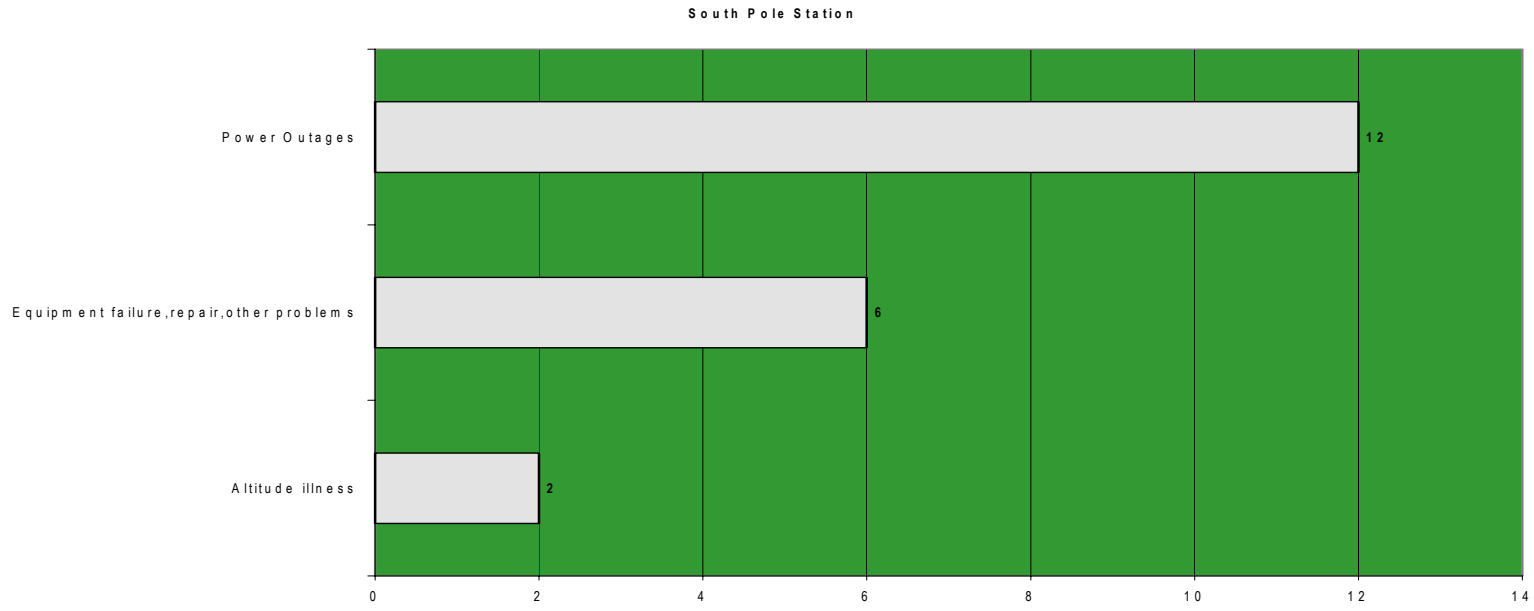

Figure 14: South Pole Station

FY 2001
USAP Research Support Facilities Survey
Unproductive Days Caused by Transportation Difficulties

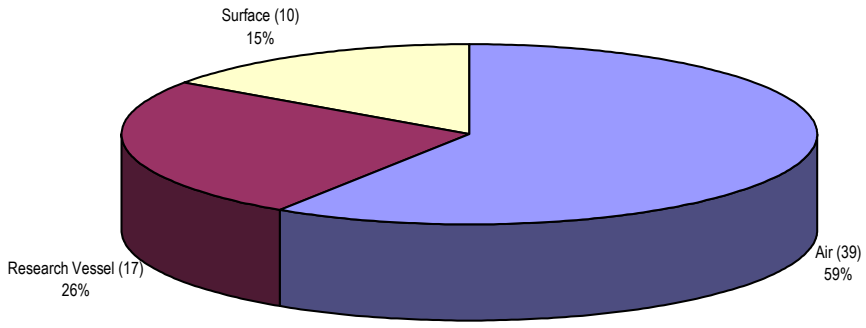

Figure 15: Unproductive Days Caused by Transportation Difficulties

FY 2001
USAP Research Support Facilities Survey
Planning Effectiveness – Days Lost by Facility

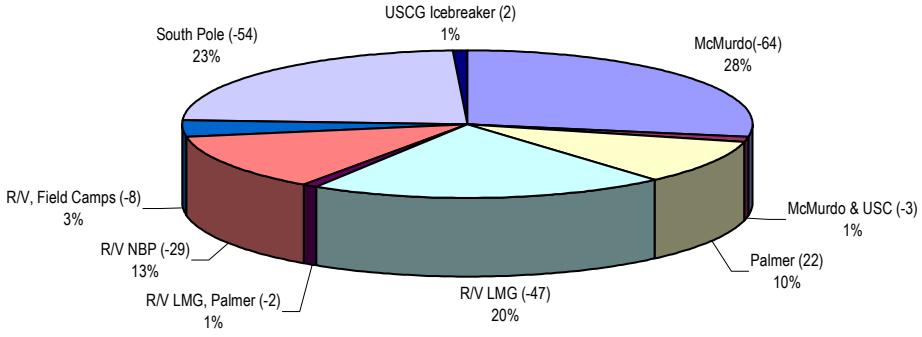

Figure 16: Planning Effectiveness – Days Lost by Facility

FY 2001
USAP Research Support Facilities Survey
Planning Effectiveness – Days Lost by Various Causes

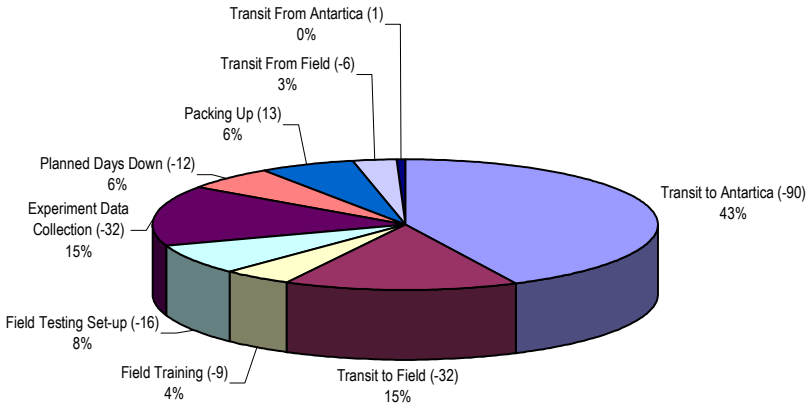

Figure 17: Planning Effectiveness – Days Lost by Various Causes

FY 2001
USAP Research Support Facilities Survey
Rating of Support Provided your Project

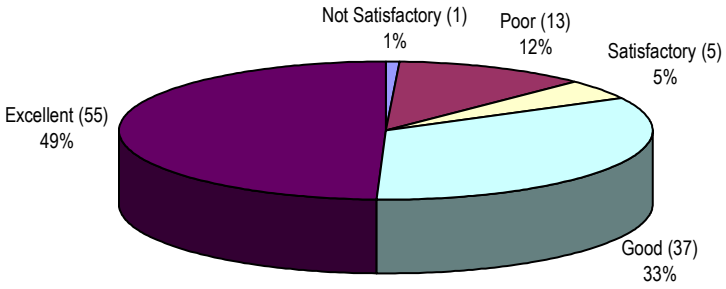

Figure 18: Rating Support Provided Your Project

FY 2001
USAP Research Support Facilities Survey
Survey Design Captured Facility Support of Your Project

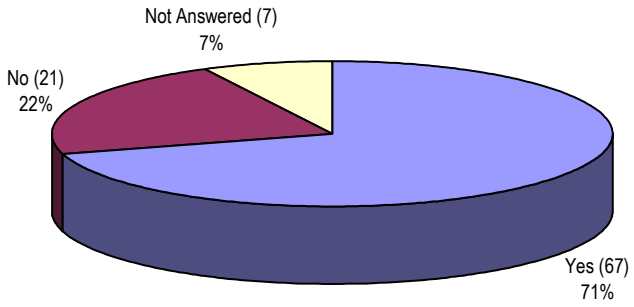

Figure 19: Survey Design Captured Facility Support Provided Your Project

Event Number _____

FY 2002 USAP RESEARCH SUPPORT FACILITIES SURVEY

INSTRUCTIONS: This survey is designed to collect information regarding research support facilities in the United States Antarctic Program (USAP), for use by NSF/OPP in its annual performance plan report for the Government Performance and Results Act (GPRA). Each project Principal Investigator (PI) or Field Team Leader should **complete and return a separate survey for each facility, regardless of whether your project deployed to Antarctica during FY 2002**. Send your completed survey(s) via e-mail to: GPRA2002@polar.org. Contact the Raytheon Polar Services Company, Director, Performance Assurance/Quality Assurance (Steve.Kottmeier@polar.org, 800/688-8606, ext. 5510) with any questions.

(1) PROJECT INFORMATION

A) Event number ..... _____

B) Principal Investigator (PI) ..... _____

C) Field Team Leader (if different from PI) ..... _____

D) List **All** Deploying Members of the Project Field Team (Include PI and Field Team Leader as applicable.)

1 _____ 3 _____ 5 _____ 7 _____

2 _____ 4 _____ 6 _____ 8 _____

E) USAP Research Support Facility supporting your project

☐ McMurdo and Field Camps ☐ Research Vessels (LMG or NBP) and Field Camps Cruise # _____

☐ Palmer ☐ USCGC Icebreaker Cruise # _____

☐ South Pole

F) Survey Period ☐ FY2002-1 (1 Oct 2001 – 31 Mar 2002, 182 total days)

☐ FY2002-2 (1 Apr 2002 – 30 Sept 2002, 183 total days)

☐ FY2002-3 (1 Oct 2001 – 30 Sept 2002, 365 total days)

(2) QUALITY TIME IN ANTARCTICA

Note: (1) Use elapsed calendar days rather than person-days in your responses.

(2) Include the number of days that technicians of the USAP Support Contractor supported your project.

A) Productive Days: Estimate of the number of productive days your project experienced ..... _____

B) Unproductive Days: Estimate of the number of unproductive days your project experienced for each of the following reasons:

Days Lost Due To:

1) Delays in cargo ..... _____

2) Failure of USAP-provided equipment/instruments ..... _____

3) Inadequate laboratory/observatory space ..... _____

4) Problems with USAP-provided material (incorrect/insufficient) ..... _____

5) Unavailability of cryogenic materials ..... _____

6) Unavailability of USAP Support Contractor Science Technician ..... _____

7) Problems with transportation (not related to bad weather delays): _____

aircraft ☐ research vessel ☐ surface vehicle ☐ Total Transportation 0

8) Bad weather delays ..... _____

9) Other circumstances (please specify below) ..... _____

_____

10) **Subtotal Unproductive Project Days** (Sum of Lines 2B1-2B9) **0**

C) Total Project Days (Line 2A + Line 2B10) **0**

Figure 20: FY 2002 USAP Research Support Facilities Survey Form **(continued on next page)**

(3) EFFECTIVENESS OF PLANNING

Provide estimates of your project's Planned Days *minus* Actual Days for the following activities.

Note: Enter: **(a)** Appropriate plus (+) or minus (-) sign; **(b)** Zero if Planned and Actual are equal; **(c)** NA if not applicable

For example, if you planned 5 days for transit to Antarctica and it required 7 days, then record (-2).

		Planned minus Actual			*Planned minus Actual*
1)	Days in transit to Antarctica		6)	Down days	0
2)	Days for field training		7)	Days for packing up	
3)	Days for field testing/set-up		8)	Days in transit from field	
4)	Days in transit to field		9)	Days in transit from Antarctica	
5)	Days for experimentation and data collection		10)	**Total Planned minus Actual Days** (Sum of Lines 1-9)	

(4) OVERALL ASSESSMENT

A) Rate the support provided your project.

Unsatisfactory ☐ Poor ☐ Satisfactory ☐ Good ☐ Excellent ☐

B) Considering your responses, does this survey capture the way in which the USAP Research Support Facility (see 1.E.) supported your project?

Yes ☐ No ☐

If No, then please suggest how the survey might be improved to better capture your support (use separate page, as required)

C) Describe any specific support difficulties your project encountered and suggested solutions (use separate page, as required).

Figure 20: FY 2002 USAP Research Support Facilities Survey Form

Table 1: Science Project Planned Days for FY 2001

		Personnel Deployments	Project Planned	Project Reported Total Days	Percent Total Days/ Planned Days
Project	1	47	323	0	0.00%
Project	2	19	90	0	0.00%
Project	3	17	90	0	0.00%
Project	4	20	90	60	66.67%
Project	5	10	323	0	0.00%
Project	6	10	323	330	102.17%
Project	7	6	323	0	0.00%
Project	8	6	323	0	0.00%
Project	9	0	323	0	0.00%
Project	10	6	323	0	0.00%
Project	11	2	323	0	0.00%
Project	12	10	323	267	82.66%
Project	13	0	365	0	0.00%
Project	14	0	365	0	0.00%
Project	15	0	365	362	99.18%
Project	16	0	365	362	99.18%
Project	17	1	3	0	0.00%
Project	18	1	30	0	0.00%
Project	19	0	365	0	0.00%
Project	20	2	40	0	0.00%
Project	21	5	365	360	98.63%
Project	22	3	365	362	99.18%
Project	23	2	7	0	0.00%
Project	24	2	7	0	0.00%
Project	25	0	70	0	0.00%
Project	26	3	14	7	50.00%
Project	27	3	232	0	0.00%
Project	28	3	232	0	0.00%
Project	29	3	7	0	0.00%
Project	30	4	14	0	0.00%
Project	31	4	7	0	0.00%
Project	32	5	318	0	0.00%
Project	33	0	365	365	100.00%
Project	34	3	232	0	0.00%
Project	35	5	365	46	12.60%
Project	36	3	263	0	0.00%
Project	37	0	46	0	0.00%
Project	38	3	42	31	73.81%
Project	39	0	46	0	0.00%
Project	40	1	42	5	11.90%
Project	41	3	42	22	52.38%
Project	42	1	42	32	76.19%
Project	43	4	46	27	58.70%

Table 1: Science Project Planned Days for FY 2001

		Personnel Deployments	Project Planned	Project Reported Total Days	Percent Total Days/ Planned Days
Project	44	4	42	25	59.52%
Project	45	2	42	21	50.00%
Project	46	0	27	0	0.00%
Project	47	0	44	0	0.00%
Project	48	0	42	0	0.00%
Project	49	2	44	17	38.64%
Project	50	2	42	14	33.33%
Project	51	6	42	10	23.81%
Project	52	0	46	0	0.00%
Project	53	0	42	0	0.00%
Project	54	0	46	0	0.00%
Project	55	0	44	0	0.00%
Project	56	0	42	0	0.00%
Project	57	0	44	0	0.00%
Project	58	6	42	40	95.24%
Project	59	4	46	35	76.09%
Project	60	1	42	39	92.86%
Project	61	4	120	78	65.00%
Project	62	3	120	80	66.67%
Project	63	6	120	115	95.83%
Project	64	4	120	100	83.33%
Project	65	5	120	98	81.67%
Project	66	3	120	35	29.17%
Project	67	4	120	35	29.17%
Project	68	7	180	0	0.00%
Project	69	7	135	55	40.74%
Project	70	3	30	21	70.00%
Project	71	6	90	50	55.56%
Project	72	4	75	0	0.00%
Project	73	9	60	59	98.33%
Project	74	2	75	41	54.67%
Project	75	5	30	0	0.00%
Project	76	5	35	0	0.00%
Project	77	6	30	28	93.33%
Project	78	6	35	0	0.00%
Project	79	3	15	8	53.33%
Project	80	5	135	140	103.70%
Project	81	7	30	24	80.00%
Project	82	14	23	12	52.17%
Project	83	9	135	120	88.89%
Project	84	2	45	0	0.00%
Project	85	2	0	12	
Project	86	2	12	3	25.00%

Table 1: Science Project Planned Days for FY 2001

		Personnel Deployments	Project Planned	Project Reported Total Days	Percent Total Days/ Planned Days
Project	87	39	45	0	0.00%
Project	88	10	21	21	100.00%
Project	89	10	18	22	122.22%
Project	90	5	45	35	77.78%
Project	91	5	22	21	95.45%
Project	92	7	22	22	100.00%
Project	93	6	165	0	0.00%
Project	94	6	31	0	0.00%
Project	95	6	165	0	0.00%
Project	96	6	31	0	0.00%
Project	97	0	31	0	0.00%
Project	98	6	165	163	98.79%
Project	99	9	31	27	87.10%
Project	100	4	165	0	0.00%
Project	101	4	31	0	0.00%
Project	102	6	31	0	0.00%
Project	103	6	45	30	66.67%
Project	104	3	60	28	46.67%
Project	105	7	75	0	0.00%
Project	106	0	365	0	0.00%
Project	107	2	3	0	0.00%
Project	108	3	60	40	66.67%
Project	109	5	120	75	62.50%
Project	110	8	60	0	0.00%
Project	111	4	15	0	0.00%
Project	112	3	15	10	66.67%
Project	113	4	16	27	168.75%
Project	114	0	16	0	0.00%
Project	115	5	59	51	86.44%
Project	116	22	59	62	105.08%
Project	117	7	60	0	0.00%
Project	118	7	365	176	48.22%
Project	119	3	60	0	0.00%
Project	120	6	45	15	33.33%
Project	121	1	30	0	0.00%
Project	122	2	30	0	0.00%
Project	123	2	45	11	24.44%
Project	124	4	45	47	104.44%
Project	125	4	30	0	0.00%
Project	126	4	45	22	48.89%
Project	127	3	45	22	48.89%
Project	128	2	105	0	0.00%
Project	129	11	22	45	204.55%

Table 1: Science Project Planned Days for FY 2001

		Personnel Deployments	Project Planned	Project Reported Total Days	Percent Total Days/ Planned Days
Project	130	21	90	0	0.00%
Project	131	5	45	42	93.33%
Project	132	2	15	25	166.67%
Project	133	4	45	38	84.44%
Project	134	11	60	0	0.00%
Project	135	6	30	20	66.67%
Project	136	2	40	16	40.00%
Project	137	2	30	6	20.00%
Project	138	4	45	0	0.00%
Project	139	3	30	24	80.00%
Project	140	3	30	30	100.00%
Project	141	2	70	63	90.00%
Project	142	4	45	46	102.22%
Project	143	5	60	0	0.00%
Project	144	2	60	36	60.00%
Project	145	3	60	0	0.00%
Project	146	3	60	0	0.00%
Project	147	1	60	0	0.00%
Project	148	2	60	0	0.00%
Project	149	14	60	0	0.00%
Project	150	2	60	0	0.00%
Project	151	1	60	0	0.00%
Project	152	0	27	0	0.00%
Project	153	0	44	0	0.00%
Project	154	0	42	0	0.00%
Project	155	2	44	30	68.18%
Project	156	2	42	30	71.43%
Project	157	1	27	43	159.26%
Project	158	0	46	0	0.00%
Project	159	1	44	25	56.82%
Project	160	0	42	0	0.00%
Project	161	0	46	0	0.00%
Project	162	0	42	0	0.00%
Project	163	0	44	0	0.00%
Project	164	0	42	0	0.00%
Project	165	3	42	29	69.05%
Project	166	0	42	0	0.00%
Project	167	8	218	90	41.28%
Project	168	0	365	0	0.00%
Project	169	10	37	33	89.19%
Project	170	3	15	0	0.00%
Project	171	0	365	0	0.00%
Project	172	8	365	350	95.89%

Table 1: Science Project Planned Days for FY 2001

		Personnel Deployments	Project Planned	Project Reported Total Days	Percent Total Days/ Planned Days
Project	173	0	96	0	0.00%
Project	174	2	20	21	105.00%
Project	175	0	365	0	0.00%
Project	176	12	60	0	0.00%
Project	177	0	365	0	0.00%
Project	178	2	60	1	1.67%
Project	179	2	40	24	60.00%
Project	180	0	365	0	0.00%
Project	181	3	15	0	0.00%
Project	182	1	30	8	26.67%
Project	183	2	300	278	92.67%
Project	184	0	300	0	0.00%
Project	185	5	30	0	0.00%
Project	186	2	45	36	80.00%
Project	187	1	30	29	96.67%
Project	188	0	53	0	0.00%
Project	189	0	19	0	0.00%
Project	190	0	135	0	0.00%
Project	191	5	365	350	95.89%
Project	192	0	45	0	0.00%
Project	193	1	365	360	98.63%
Project	194	1	365	334	91.51%
Project	195	1	365	360	98.63%
Project	196	1	45	0	0.00%
Project	197	1	30	0	0.00%
Project	198	2	30	0	0.00%
Project	199	4	60	0	0.00%
Planned TOTALS		**822**	**20,981**		
Responses TOTALS			**9,720**	**7,702**	**79.24%**

Table 2 Master Report of Survey Responses

Table 2 is a report of all collected data sorted by Event Number (WO Events are listed first)
The report is derived from a Microsoft Access database of survey responses.
One complete copy is available for review at the National Science Foundation from Dr. Harry Mahar.

Table 3 Science Project Survey Response Rate by Facility

Fiscal Years 1999, 2000 and 2001 Comparison

USAP Facility	Total Projects			Survey Responses			% Responses per Facility			% Responses per Total		
	FY 1999	FY 2000	FY 2001	FY 1999	FY 2000	FY 2001	FY 1999	FY 2000	FY 2001	FY 1999	FY 2000	FY 2001
McMurdo	78	87	74	73	65	39	94%	74%	53%	42%	35%	20%
Multiple Stations	6	4	3	5	4	3	83%	100%	100%	3%	2%	2%
Other	2	5	1	1	2	0	50%	40%	0%	1%	1%	0%
Palmer	14	19	12	11	12	2	79%	63%	17%	6%	7%	1%
R/V LMG	21	19	34	17	18	18	81%	95%	53%	10%	10%	9%
R/V LMG, Palmer	4	1	5	2	1	1	50%	100%	20%	1%	1%	1%
R/V NBP	20	16	29	19	13	15	95%	81%	52%	11%	7%	8%
R/V, Field Camps	2	1	5	2	1	3	100%	100%	60%	1%	1%	2%
South Pole	28	29	34	20	17	13	71%	59%	38%	11%	9%	7%
USCG Icebreaker	n/a	3	2	n/a	2	1	n/a	67%	50%	n/a	1%	1%
Totals	**175**	**184**	**199**	**150**	**135**	**95**	**n/a**	**n/a**	**n/a**	**86%**	**73%**	**48%**

Table 4a Science Project Quality Time in Antarctica by Facility

Fiscal Years 1999, 2000 and 2001 Comparison

Location	*Fiscal Year*	*Number of Projects Respond.*	*Number of Team Members*	*Total Project Days*	*Productive Days*	*Unproductive Days*	*Delays in Cargo*	*Failure of Equip./ Instr.*	*Inadequate Lab/ Observ. Space*	*Incorrect/ Insufficient Material*	*Unavail. Cryo-genics*	*Unavail. Science Techs*	*Air*	*Surface*	*R/V*	*Delays in Trans-portation Total*	*Bad Weather Days*	*Other Circum-stances*
McMurdo	FY 1999	73	330	6,204	5,537	667	45	60	3	18		*n/a*	166	1	0	167	290	85
	FY 2000	65	284	4,090	3,516	574	28	13	11	3	*n/a*	*n/a*	113	3	0		366	37
	FY 2001	39	169	3,099	2,784	315	7	4	5	0	0	0	32	1	0	33	208	58
McMurdo	FY 1999	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*		*n/a*	*n/a*	*n/a*
&	FY 2000	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	
USCG	FY 2001	3	14	113	107	6	4	0	0	0	*0*	*0*	1	0	0	1	1	0
Multiple		5	13	232	206	26	0	2	0	0	*n/a*	*n/a*	5	0	2	7	17	
Stations	FY 2000	4	10	463	171	292	0	0	0	0	*n/a*	*n/a*	91	0	0	91	105	96
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	FY 1999	1	4	33	19	14	0	0	0	0	*n/a*	*n/a*	8	0	0	8	6	0
	FY 2000	2	5	132	120	12	0	0	0	0	*n/a*	*n/a*	2	0	0	2	10	0
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmer	FY 1999	11	23		1,838	205	13	49	0	6	*n/a*	*n/a*	0	0	8	8	114	15
	FY 2000	12	43		1,175	116	0	11	2	9	*n/a*	*n/a*	0	0	7	7	81	6
	FY 2001	2	7	542	497	45	1	2	0	0	0	15	0	0	0	0	12	15
R/V	FY 1999	17	77	533	417	116		16	2	2	*n/a*	*n/a*	0	1	9	10	31	49
LMG	FY 2000	18	90	476	437	39		3	0	0	*n/a*	*n/a*	0	0	8	8	26	2
	FY 2001	18	88	738	641	97	0	4	4	1	1	2	0	9	15	24	21	40
R/V	FY 1999	2	9	280	253	27	8	10	0	2		*n/a*	1	0	1	2	5	0
LMG,	FY 2000	1	0	15	15	0	0	0	0	0		*n/a*	0	0	0	0	0	0
Palmer	FY 2001	1	6	30	28	2	0	0	0	2	0	0	0	0	0	0	0	0
R/V	FY 1999	19	129	908	856	52	0	20	0	0	*n/a*	*n/a*		0	0	0	22	10
NBP	FY 2000	13	64	551	499	52	5	3	0	2	*n/a*	*n/a*		0	17	17	24	1
	FY 2001	15	75	529	471	58	4	7	0	2	0	1	0	0	0	0	17	27
R/V,	FY 1999	2	8	195	190	5	0	0	0	0	*n/a*	*n/a*	0	0		0	5	0
Field	FY 2000	1	7	16	16	0	0	0	0	0	*n/a*	*n/a*	0	0		0	0	0
Camps	FY 2001	3	9	254	214	40	0	0	0	0	0	0	0	0	2	2	30	8
South	FY 1999	20	112	5,174	4,500	674	17	247	24	47	*n/a*	*n/a*	12	0	0	12	155	173
Pole	FY 2000	17	126	2,996	2,606	390	10	48	0	83	*n/a*		12	1	0	13	95	141
	FY 2001	13	59	3,065	2,939	126	6	6	7	0	50	1	6	0	0	6	30	20
USCG	FY 1999	0	0	0	0	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0	0
Ice-	FY 2000	2	7	26	25	1	0	0	0	0	*n/a*	*n/a*	0	0	0	0	1	0
breaker	FY 2001	1	2	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**FY 1999**	**150**	**705**	**15,602**	**13,816**	**1,786**	**88**	**405**	**28**	**75**	***n/a***	***n/a***	**192**	**2**	**20**	**214**	**645**	**332**
	FY 2000	**135**	**636**	**10,056**	**8,580**	**1,476**	**43**	**78**	**13**	**97**	***n/a***	***n/a***	**218**	**4**	**32**	**254**	**708**	**283**
	FY 2001	**95**	**429**	**8,391**	**7,702**	**689**	**22**	**23**	**16**	**5**	**51**	**19**	**39**	**10**	**17**	**66**	**319**	**168**

Table 4b Science Project Quality Time minus Bad Weather Days

Fiscal Years 1999, 2000 and 2001 Comparison

Location	*Fiscal Year*	*Number of Projects Responding*	*Number of Team Members*	*Corrected Total Days **	*Productive Days*	*Corrected Unproductive Days **	*Delays in Cargo*	*Failure of Equipment/ Instruments*	*Inadequate Lab/Observ. Space*	*Incorrect/ Insufficient Material*	*Unavail. Cryogenics*	*Unavail. Science Techs*	*Air*	*Surface*	*R/V*	*Delays in Trans-portation Total*	*Other Circum-stances*
McMurdo	FY 1999	73	330	5,914	5,537	377	45	60	3	18	*n/a*	*n/a*	166	1	0	167	85
	FY 2000	65	284	3,724	3,516	208	28	13	11	3	*n/a*	*n/a*	113	3	0	116	37
	FY 2001	39	169	2,891	2,784	107	7	4	5	0	0	0	32	1	0	33	58
McMurdo	FY 1999	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
&	FY 2000	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
USCG	FY 2001	3	14	112	107	5	4	0	0	0	*0*	*0*	1	0	0	1	0
Multiple	FY 1999	5	13	215	206	9	0	2	0	0	*n/a*	*n/a*	5	0	2	7	0
Stations	FY 2000	4	10	358	171	187	0	0	0	0	*n/a*	*n/a*	91	0	0	91	96
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	FY 1999	1	4	27	19	8	0	0	0	0	*n/a*	*n/a*	8	0	0	8	0
	FY 2000	2	5	122	120	2	0	0	0	0	*n/a*	*n/a*	2	0	0	2	0
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmer	FY 1999	11	23	1,929	1,838	91	13	49	0	6	*n/a*	*n/a*	0	0	8	8	15
	FY 2000	12	43	1,210	1,175	35	0	11	2	9	*n/a*	*n/a*	0	0	7	7	6
	FY 2001	2	7	530	497	33	1	2	0	0	0	15	0	0	0	0	15
R/V LMG	FY 1999	17	77	502	417	85	6	16	2	2	*n/a*	*n/a*	0	1	9	10	49
	FY 2000	18	90	450	437	13	0	3	0	0	*n/a*	*n/a*	0	0	8	8	2
	FY 2001	18	88	717	641	76	0	4	4	1	1	2	0	9	15	24	40
R/V LMG	FY 1999	2	9	275	253	22	8	10	0	2	*n/a*	*n/a*	1	0	1	2	0
Palmer	FY 2000	1	0	15	15	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0
	FY 2001	1	6	30	28	2	0	0	0	2	0	0	0	0	0	0	0
R/V NBP	FY 1999	19	129	886	856	30	0	20	0	0	*n/a*	*n/a*	0	0	0	0	10
	FY 2000	13	64	527	499	28	5	3	0	2	*n/a*	*n/a*	0	0	17	17	1
	FY 2001	15	75	512	471	41	4	7	0	2	0	1	0	0	0	0	27
R/V,	FY 1999	2	8	190	190	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0
Field	FY 2000	1	7	16	16	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0
Camps	FY 2001	3	9	224	214	10	0	0	0	0	0	0	0	0	2	2	8
South	FY 1999	20	112	5,019	4,500	519	17	247	24	47	*n/a*	*n/a*	12	0	0	12	173
Pole	FY 2000	17	126	2,901	2,606	295	10	48	0	83	*n/a*	*n/a*	12	1	0	13	141
	FY 2001	13	59	3,035	2,939	96	6	6	7	0	50	1	6	0	0	6	20
USCG	FY 1999	0	0	0	0	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0
Icebreake	FY 2000	2	7	25	25	0	0	0	0	0	*n/a*	*n/a*	0	0	0	0	0
r	FY 2001	1	2	21	21	0	0	0	0	0	0	0	0	0	0	0	0
Totals	FY 1999	150	705	14,957	13,816	1,141	88	405	28	75	*n/a*	*n/a*	192	2	20	214	332
	FY 2000	135	636	9,348	8,580	768	43	78	13	97	*n/a*	*n/a*	218	4	32	254	283
	FY 2001	95	429	8,072	7,702	370	22	23	16	5	51	19	39	10	17	66	168

**** Corrected = Bad Weather Days are not included***

Table 4c Science Project Effectiveness of Planning and Overall Assessment

Fiscal Years 1999, 2000 and 2001 Comparison

		Effectiveness of Planning Actual Versus Planned Performance (-) sign to designate days lost (no) sign to designate days gained										Overall Assessment Rating of Support Provided for Project Season					Survey Captured Assessment of Project Support		
Location	*Fiscal Year*	*Transit To Ice*	*Transit to Field*	*Field Training*	*Field Testing Set-Up*	*Experiment Data Collect.*	*Planned Down Days*	*Packing Up*	*Transit From Field*	*Transit From Ice*	*Total Days*	*Not Satis-fact.*	*Poor*	*Satis-fact.*	*Good*	*Excel-lent*	*Yes*	*No*	*Not Answered*
McMurdo	FY 1999	-238	-138	-2	-18	-1	n/a	4	-54	-23	-470	1	n/a	9	n/a	72	4	69	11
	FY 2000	-92	-148	-16	-19	-23	n/a	3	-6	-37	-338	1	n/a	13	n/a	49	50	13	2
	FY 2001	-50	-27	-9	-6	23	-3	11	-3	0	-64	0	1	0	14	24	31	5	3
McMurdo & USCG	FY 1999	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	FY 2000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	FY 2001	0	-2	0	0	0	0	0	-1	0	-3	0	0	0	1	1	2	0	1
Multiple Stations	FY 1999	-7	0	-4	0	29	n/a	2	-1	3	22	0	n/a	0	n/a	5	0	5	0
	FY 2000	3	-96	1	0	0	n/a	0	3	0	-89	0	n/a	3	n/a	1	1	3	0
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	FY 1999	0	-3	0	-1	0	n/a	-1	-3	0	-8	0	n/a	0	n/a	2	0	2	0
	FY 2000	-3	0	0	0	0	n/a	0	0	-3	-6	0	n/a	0	n/a	2	0	2	0
	FY 2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmer	FY 1999	2	-24	-1	-8	-102	n/a	-14	-4	-25	-176	1	n/a	5	n/a	14	2	10	8
	FY 2000	-1	0	-1	-5	-45	n/a	-4	0	1	-55	0	n/a	3	n/a	9	9	3	1
	FY 2001	0	0	0	0	10	3	0	0	9	22	0	0	0	1	1	1	0	1
RV LMG	FY 1999	1	5	0	-4	-8	n/a	-6	5	3	-5	1	n/a	5	n/a	15	2	3	15
	FY 2000	-5	-1	0	-7	-5	n/a	-7	0	-12	-37	0	n/a	0	n/a	18	11	4	2
	FY 2001	-6	-3	0	-2	-30	-8	1	0	1	-47	1	0	3	2	12	11	6	1
R/V LMG, Palmer	FY 1999	-1	0	0	-1	-10	n/a	-1	0	-2	-15	0	n/a	3	n/a	0	0	2	1
	FY 2000	0	0	0	0	0	n/a	0	0	0	0	0	n/a	0	n/a	1	1	0	0
	FY 2001	0	0	0	0	-2	0	0	0	0	-2	0	0	0	0	1	1	0	0
R/V NBP	FY 1999	7	1	0	2	-6	n/a	2	0	5	11	1	n/a	12	n/a	15	0	17	11
	FY 2000	2	-4	-2	-1	-23	n/a	-4	-1	0	-33	0	n/a	1	n/a	12	10	4	0
	FY 2001	0	0	0	-1	-19	-9	0	0	0	-29	0	1	2	4	8	8	6	1
R/V Field Camps	FY 1999	0	0	-2	0	2	n/a	1	0	0	1	0	n/a	1	n/a	1	0	1	1
	FY 2000	0	0	0	0	0	n/a	0	0	0	0	0	n/a	0	n/a	1	1	0	0
	FY 2001	-6	1	0	0	0	0	0	0	-3	-8	0	0	0	2	1	0	3	0
South Pole	FY 1999	-36	40	10	-11	-25	n/a	-4	20	6	0	4	n/a	8	n/a	29	1	30	9
	FY 2000	-56	-6	0	-1	-152	n/a	2	0	0	-213	1	n/a	5	n/a	11	12	5	1
	FY 2001	-28	-1	0	-8	-14	5	1	-2	-7	-54	0	0	0	5	7	12	1	0
USCG Ice-breaker	FY 1999	0	0	0	0	0	n/a	0	0	0	0	0	n/a	0	n/a	0	0	0	0
	FY 2000	0	0	0	0	-1	n/a	0	0	0	-1	0	n/a	2	n/a	0	1	1	0
	FY 2001	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	1	0	0
Totals	**FY 1999**	**-273**	**-120**	**1**	**-41**	**-121**	**n/a**	**-17**	**-37**	**-34**	**-640**	**8**	**n/a**	**43**	**n/a**	**153**	**9**	**139**	**56**
	FY 2000	**-152**	**-255**	**-18**	**-33**	**-249**	**n/a**	**-10**	**-4**	**-51**	**-772**	**2**	**n/a**	**27**	**n/a**	**104**	**96**	**35**	**6**
	FY 2001	**-90**	**-32**	**-9**	**-16**	**-32**	**-12**	**13**	**-6**	**1**	**-183**	**1**	**2**	**5**	**29**	**55**	**67**	**21**	**7**

Table 5 Causes of Unproductive Days

Fiscal Years 1999, 2000 and 2001 Comparison

Causes of Unproductive Days	Corrected Unproductive Days			Percent of Total Unproductive Days			Percent of Unproductive Days		
	FY 1999	FY 2000	FY 2001	FY 1999	FY 2000	FY2001	FY 1999	FY 2000	FY2001
Bad Weather	645	708	**319**	36%	48%	**46%**	n/a	0%	**0%**
Other Circumstances	332	283	**168**	19%	19%	**24%**	29%	37%	**45%**
Transportation	214	254	**66**	12%	17%	**10%**	19%	33%	**18%**
Unavailability of Cryogenic Materials	n/a	n/a	**51**	n/a	n/a	**7%**	n/a	n/a	**14%**
Failure of Equipment/Instruments	405	78	**23**	23%	5%	**3%**	35%	10%	**6%**
Delays in Cargo	88	43	**22**	5%	3%	**3%**	8%	6%	**6%**
Unavailability of Science Techs	n/a	n/a	**19**	n/a	n/a	**3%**	n/a	n/a	**5%**
Inadequate Laboratory/Observatory Space	28	13	**16**	2%	1%	**2%**	2%	2%	**4%**
Incorrect/Insufficient Material	75	97	**5**	4%	7%	**1%**	7%	13%	**1%**
Totals	**1,786**	**1,476**	**689**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 6 Science Project Quality Time minus Bad Weather Days and Percentages of Facility Unproductive Days minus Bad Weather Days

Fiscal Years 1999, 2000 and 2001 Comparison

Facility	*Fiscal Year*	*Number of Projects Respond.*	*Number of Team Members*	*Corrected Total Days **	*Productive Days*	*Corrected Unproduct. Days**	*Unproduct. Days*	*Delays in Cargo*	*Failure of Equip./ Instr.*	*Inadequate Lab/ Observ. Space*	*Incorrect/ Insufficient Material*	*Unavail. Cryo-genics*	*Unavail. Science Techs*	*Air*	*Surface*	*R/V*	*Trans-port Total*	*Bad Weather Days*	*Other Circum-stances*
McMurdo	FY 1999	73	330	5,914	5,537	377	667	n/a	16%	n/a	n/a	n/a	n/a	44%	0%	0%	44%	43%	23%
	FY 2000	65	284	3,724	3,516	208	574	13%	6%	5%	1%	n/a	n/a	54%	1%	0%	56%	64%	18%
	FY 2001	39	169	2,891	2,784	107	315	7%	4%	5	0%	0%	0%	30%	1%	0%	31%	66%	54%
McMurdo & USCG	FY 1999	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	FY 2000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	FY 2001	3	14	112	107	5	6	80%	0%	0%	0%	0%	0%	20%	0%	0%	20%	17%	0%
Multiple Stations	FY 1999	5	13	215	206	9	26	n/a	22%	n/a	n/a	n/a	n/a	56%	0%	22%	78%	65%	0%
	FY 2000	4	10	358	171	187	292	0%	0%	0%	0%	n/a	n/a	49%	0%	0%	49%	36%	51%
	FY 2001	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	FY 1999	1	4	27	19	8	14	n/a	0%	n/a	n/a	n/a	n/a	100%	0%	0%	100%	43%	0%
	FY 2000	2	5	122	120	2	12	0%	0%	0%	0%	n/a	n/a	100%	0%	0%	100%	83%	0%
	FY 2001	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Palmer	FY 1999	11	23	1,929	1,838	91	205	n/a	54%	n/a	n/a	n/a	n/a	0%	0%	9%	9%	56%	16%
	FY 2000	12	43	1,210	1,175	35	116	0%	31%	6%	26%	n/a	n/a	0%	0%	20%	20%	70%	17%
	FY 2001	2	7	530	497	33	45	3%	6%	0%	0%	0%	45%	0%	0%	0%	0%	27%	45%
R/V LMG	FY 1999	17	77	502	417	85	116	n/a	19%	n/a	n/a	n/a	n/a	0%	1%	11%	12%	27%	58%
	FY 2000	18	90	450	437	13	39	0%	23%	0%	0%	n/a	n/a	0%	0%	62%	62%	67%	15%
	FY 2001	18	88	717	641	76	97	0%	5%	5%	1%	1%	3%	0%	12%	20%	32%	22%	53%
R/V LMG, Palmer	FY 1999	2	9	275	253	22	27	n/a	45%	n/a	n/a	n/a	n/a	5%	0%	5%	9%	19%	0%
	FY 2000	1	0	15	15	0	0	0%	0%	0%	0%	n/a	n/a	0%	0%	0%	0%	0%	0%
	FY 2001	1	6	30	28	2	2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
R/V NBP	FY 1999	19	129	886	856	30	52	n/a	68%	n/a	n/a	n/a	n/a	0%	0%	0%	0%	42%	33%
	FY 2000	13	64	527	499	28	52	18%	11%	0%	7%	n/a	n/a	0%	0%	61%	61%	46%	4%
	FY 2001	15	75	512	471	41	58	10%	17%	0%	5%	0%	2%	0%	0%	0%	0%	29%	66%
R/V Field Camps	FY 1999	2	8	190	190	0	5	n/a	0%	n/a	n/a	n/a	n/a	0%	0%	0%	0%	100%	0%
	FY 2000	1	7	16	16	0	0	0%	0%	0%	0%	n/a	n/a	0%	0%	0%	0%	0%	0%
	FY 2001	3	9	224	214	10	40	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	75%	80%
South Pole	FY 1999	20	112	5,019	4,500	519	674	n/a	48%	n/a	n/a	n/a	n/a	2%	0%	0%	2%	23%	33%
	FY 2000	17	126	2,901	2,606	295	390	3%	16%	0%	28%	n/a	n/a	4%	0%	0%	4%	24%	48%
	FY 2001	13	59	3,035	2,939	96	126	6%	6%	7%	0%	52%	1%	6%	0%	0%	6%	24%	21%
USCG Ice-breaker	FY 1999	0	0	0	0	0	0	n/a	0%	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%
	FY 2000	2	7	25	25	0	1	0%	0%	0%	0%	n/a	n/a	0%	0%	0%	0%	0%	0%
	FY 2001	1	2	21	21	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Totals	**FY 1999**	**150**	**705**	**14,957**	**13,816**	***1,141***	**1,786**	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***
	FY 2000	**135**	**636**	**9,348**	**8,580**	***768***	**1,476**	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***
	FY 2001	**95**	**429**	**8,072**	**7,702**	**370**	**689**	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***	***n/a***

*Corrected = Bad Weather Days are not included

Percentage = Bad Weather Days of Total Unproductive Days

Table 7 Facility Contribution to Productive and Unproductive Days

Fiscal Years 1999, 2000 and 2001 Comparison

Facility	Fiscal Year	Corrected Total Days	Productive Days	Corrected Unproductive Days	Percent of Facility Productive Days	Facility Percent of Facility Unproductive Days	Facility Percent of Total Productive Days	Percent of Total Unproductive Days
McMurdo	FY 1999	5,914	5,537	377	94%	6%	40%	33%
	FY 2000	3,724	3,516	208	94%	6%	41%	27%
	FY 2001	2,891	2,784	107	96%	4%	36%	29%
McMurdo & USCG	FY 1999	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
	FY 2000	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
	FY 2001	112	107	5	96%	4%	1%	1%
Multiple Stations	FY 1999	215	206	9	96%	4%	1%	1%
	FY 2000	358	171	187	48%	52%	2%	24%
	FY 2001	0	0	0	0%	0%	0%	0%
Other	FY 1999	27	19	8	70%	30%	0%	1%
	FY 2000	122	120	2	98%	2%	1%	0%
	FY 2001	0	0	0	0%	0%	0%	0%
Palmer	FY 1999	1,929	1,838	91	95%	5%	13%	8%
	FY 2000	1,210	1,175	35	97%	3%	14%	5%
	FY 2001	530	497	33	94%	6%	6%	9%
R/V LMG	FY 1999	502	417	85	83%	17%	3%	7%
	FY 2000	450	437	13	97%	3%	5%	2%
	FY 2001	717	641	76	89%	11%	8%	21%
R/V LMG, Palmer	FY 1999	275	253	22	92%	8%	2%	2%
	FY 2000	15	15	0	100%	0%	0%	0%
	FY 2001	30	28	2	93%	7%	0%	1%
R/V NBP	FY 1999	886	856	30	97%	3%	6%	3%
	FY 2000	527	499	28	95%	5%	6%	4%
	FY 2001	512	471	41	92%	8%	6%	11%
R/V Field Camps	FY 1999	190	190	0	100%	0%	1%	0%
	FY 2000	16	16	0	100%	0%	0%	0%
	FY 2001	224	214	10	96%	4%	3%	3%
South Pole	FY 1999	5,019	4,500	519	90%	10%	33%	45%
	FY 2000	2,901	2,606	295	90%	10%	30%	38%
	FY 2001	3,035	2,939	96	97%	3%	38%	26%
USCG Ice-breaker	FY 1999	0	0	0	0%	0%	0%	0%
	FY 2000	25	25	0	100%	0%	0%	0%
	FY 2001	21	21	0	100%	0%	0%	0%
Totals	**FY 1999**	**14,957**	**13,816**	**1,141**	***n/a***	***n/a***	**99%**	**100%**
	FY 2000	**9,348**	**8,580**	**768**	***n/a***	***n/a***	**100%**	**100%**
	FY 2001	**8,072**	**7,702**	**370**	***n/a***	***n/a***	**100%**	**100%**

Table 8 Effectiveness of Planning

Fiscal Years 1999, 2000 and 2001 Comparison

Facility	Average Days Lost (-) Gained (no sign)		
	FY 1999	**FY 2000**	**FY 2001**
McMurdo	-6	-5	-2
McMurdo & USCG	*n/a*	*n/a*	-1
Multiple Stations	4	-22	0
Other	-8	-3	0
Palmer	-16	-5	11
R/V LMG	0	-2	-3
R/V LMG, Palmer	-8	0	-2
R/V NBP	0	-3	-2
R/V, Field Camps	0	0	-3
South Pole	0	-13	-4
USCG Icebreaker	*n/a*	-1	2
Total Average	**-4**	**-6**	**-2**

Table 9 Rating of Support Provided

Fiscal Years 1999, 2000 and 2001 Comparison

Facility	Rating of Support Provided (Percentage of Satisfied + Good + Excellent)		
	FY 1999 *	FY 2000 *	FY 2001
McMurdo	99%	97%	97%
McMurdo & USCG	n/a	n/a	100%
Multiple Stations	100%	100%	n/a
Other	100%	100%	n/a
Palmer	95%	100%	100%
R/V LMG	95%	100%	94%
R/V LMG, Palmer	100%	100%	100%
R/V NBP	96%	100%	93%
R/V, Field Camps	100%	100%	100%
South Pole	90%	94%	100%
USCG Icebreaker	n/a	100%	n/a
Total Average	**96%**	**99%**	**97%**

***** Percentage of Satisfied and Excellent

Table 10 Design Captured Facility Support

Fiscal Years 1999, 2000 and 2001 Comparison

Facility	Design Captured Facility Support (Affirmative Percentage)		
	FY 1999		FY2001
McMurdo	82%	78%	79%
McMurdo & USCG	n/a	n/a	67%
Multiple Stations	100%	25%	0%
Other	100%	0%	0%
Palmer	50%	75%	50%
R/V LMG	15%	61%	61%
R/V LMG, Palmer	67%	100%	100%
R/V NBP	61%		53%
R/V, Field Camps	50%	100%	0%
South Pole	75%	71%	92%
USCG Icebreaker	n/a	50%	100%
Total Average	**69%**	**64%**	**71%**

Table 11 Suggestions For Improving the USAP Research Support Facilities Survey

McMurdo

Project	1	I experienced outstanding support from some departments and poor support from others. There is no way to divide these out in this format. Pegasus=Satisfactory; Geneva and Odell=Excellent
Project	2	Your survey assumes a profile that does not necessarily reflect all the scientific programs in Antarctica. In particular, you assume that a project only includes a small number of people (<8) that all go in and out of Antarctica at the same time, and any particular problem stops work for all members of the project. An experiment like ours is actually composed of several groups whose travel is staged and who have different responsibilities. So, for example, one group may have no problems in transit to Antarctica while another group may lose several days. This does not necessarily mean that the entire project shuts down for N days while the second group is delayed. Rather there is a loss of efficiency or productivity. Likewise any particular problem may affect only a portion of the group. For example, the computer network going down may affect software development, but mechanical assembly could continue to proceed. Thus, again there is a loss of efficiency rather than complete downtime.
Project	3	Some projects working in remote field camps (such as ours) may find that the support in the field may be very different from that obtained at one of the main stations (e.g. McMurdo). It might be useful to have a separate survey describing support at remote field camps. In our case, support in town (McMurdo) and in the field (Siple Dome) was uniformly excellent last year.
Project	4	I can see why you have the questions you do, but it seems to put too much emphasis on nonproductivity. There were several days that the helo couldn't reach us because of weather, but those were not unproductive days - we just changed our plans. Likewise, with planning estimates - it's hard to tally it in terms of days lost or gained. If we got behind on something for one reason or another, we'd adjust our work schedule (work longer days) to make up the lost time.
Project	5	More specific questions - answers might be more useful.
Project	6	Some projects might like quantitation of the effectiveness or applicability of facilities provided. I have made suggestions about operational support efficiency planning.

McMurdo & USCG

Project	1	Person days vs. calendar days would be a more sensitive measure of performance.

R/V LMG

Project	1	This survey did not cover the obvious problem resulting from the dual role of LM Gould as a supply and research vessel. We lost approximately 6 days of shiptime due to servicing Palmer Station, Copa, and Cape Sherriff. The lost "person days" for science and Raytheon personnel because of the attempt to combine these functions amounted to 10x6 or 120 "person days". This is not a trivial loss for NSF or Raytheon and could be remedied by separating the functions into either science or station supply missions.
Project	2	This questionnaire attempts to put things into neat boxes there were many facets to this project that cannot be fit into simple boxes.
Project	3	This survey is written more for the land based project (McMurdo or Pole) and less for the Marine Operations projects. i.e. field training.
Project	4	NO means that a simple numerical evaluation such as this is too simplistic to truly capture the logistics of working in the field in Antarctica.

R/V NBP

Project	1	See outbrief comments
Project	2	Asking us to estimate down time in many of these categories does not reflect the performance of the contractor. You do not have control over the weather nor delays due to getting to Antarctica or going home. If you want to find out about the performance of your people, just use the surveys we fill out at …

Table 11 Suggestions For Improving the USAP Research Support Facilities Survey

Project	3	Asking us to estimate down time in many of these categories does not reflect the performance of the contractor. You do not have control over the weather nor the Chief Scientist on a cruise nor delays due to getting to the Antarctic or going home. If you want to find out about the performance of your people, just use the surveys we fill out at the end of each cruise - that is where you find out how the contractor performed. You really need different surveys for ship-based work versus station work versus deep-field support.

R/V, Field Camps

Project	1	Drop the survey, it is a waste of time.
Project	2	I had a difficult time answering some of the timing questions. I think this was probably because out transit to Antarctica was with the Argentines rather than with a US operation. The way the questions were asked about days planned and days lost, the total do not add up to the total time from portal to portal. I would be happy to comment on another way this could be accomplished, if you care to be bothered by my views.
Project	3	We do not rate ourselves in terms of days lost and gained or measure productivity in that way-it is a foreign concept. We measure it in terms of what we find and how we are doing. We may have days when weather makes it impossible to do the work we had planned. But, we can still have productive days at these times, by changing our field plan for the day. We're flexible. If there is a certain amount of work that needs to be done and we're running behind because of bad weather, we work longer and harder on the days when the weather is good. I understand why you try to record productivity in this way-so you can see how Raytheon is doing in providing support-but it just doesn't work for our kind of science.

South Pole

Project	1	Here's the completed (mostly) survey. I don't understand how t fill out section 2 (e.g. travel delays, etc.) in terms other than person-days. With our project spread out over the whole season, and not arriving as a single unit but instead having people come and go, there's no way to calculate "days lost" when one person gets delayed getting there. I appreciate the opportunity to give such feedback, but I did check the box at the bottom indicating that this form doesn't allow a well-rounded set of feedback. The support we receive from USAP is wide ranging, and it is impossible to quantify the effectiveness of that support in terms of poor support we will have inefficient days. With good support we may attain a great deal of high quality data; with bad support we will not, but we will still have "days of work" put in. One suggestion for a format would be to allow written responses next to each item in the post-SIP support agreement (I've forgotten it's name), and then a more wide-ranging free response. I fear these numbers are a poor snapshot, and really won't give much constructive feedback for future seasons. Again, I appreciate the chance to provide feedback, and apologize for my lateness. The data I have provided is just a guess, since I hadn't realized this form was coming and didn't really try and keep track in this way. We'll tray and keep a running tally this coming season. BTW, I'm cc-ing some CARA folks on this, since I think the right way to go for CARA projects, which share a lot of support, would be to have a single report to you in the future.

Table 12 Describe USAP Support

McMurdo

Project	1	Due to lack of available equipment and delayed contractor start on one of my projects, it was scaled back to 1/10 its original plan. Being a "T" event, I essentially have a contract with NSF to produce a product on a strict timeline. In my case this relied on the use/support of heavy equipment and operators. This was made clear in my SIP. Hearing on feedback on my SIP, I assumed that the tasks that needed to be done in order for me to fill my obligation were happening at the times they were prescribed to. Upon arrival, only then did I learn that nothing had been done and that essentially no resources were available to do what I was contracted to do. The SIP process needs to be interactive and needs to involve the departments whose support will be required - not just a generic POC. Additionally, the OPP tasking for a T-event (at least in my case) needs to be better compared with contractor support capacity before it becomes finalized. This will reduce surprises such as I experienced and less burden on support staff.
Project	2	Lost time was made up by very long work days in Antarctica.
Project	3	The only complaint that we had about support for the 2000-2001 season was in regard to Housing. We think that grantees who are based in McMurdo should have the opportunity to live in Dorms 208 and 209 even if they are not PI's. We would like to receive Housing Request Forms in a timely manner.
Project	4	Overall, I am very impressed with the excellent support and positive can-do attitude. 1) We did not receive our mail in the field camp. Apparently we needed to sign the card allowing Helo-Ops to get our mail. This should be stressed. 2) One freeze safe box of ice & frozen soil samples was packed with Blue Ice and marked to be put into the -20 degree freezer ASAP. One week later upon our return, we found this box in our cage in Science Cargo. 3) You might consider putting all the handouts in a tabbed binder.
Project	5	Medical - the lab kits for blood tests were very confusing to the local doctors. Performance of travel office in Colorado was poor. There was difficulty getting cargo to Willie Field for Twin Otter flights.
Project	6	Support in all areas was excellent. Radio shop, BFC, food, room, ATO & Christchurch Ops. In particular several individual's assistance was particularly noteworthy: Bill Nesbit (Comm Shop), Alan Hogan (Riggers), Greg Roes (Supply), Mellisa (BFC). Flexibility of Twin Otter crews, Siple Camp staff, Air Ops and the other Science groups at Siple Dome really made coordination easy. Taxi service in town was invaluable and precluded our need for our own vehicle. Thanks also to housing for always having a dorm ready and to CHC travel for all the excellent arrangements.

Table 12 Describe USAP Support

Project 7

There were numerous support difficulties that, in my opinion, derived from the inflexibility of McMurdo administrators, an inadequate understanding of the LDB program by these same administrators, a significant lack of communication between NSF, RPS and the experiment group, and what seemed to me to be only a grudging willingness to support the LDB program at Willy Field. Of the events that punctuated our trip to and stay in Antarctica the highlights include: 1) Loss of most travel paperwork for our crew by RPS, 2) Travel arrangements finalized by RPS sometimes only days before scheduled trip, 3) LDB buildings not dug out and opened by the time science personnel arrived, 4) Only two vans were assigned to entire LDB group (> 30 people) creating numerous McMurdo – Willy Field transportation problems even though serviceable old vans were available and awaiting shipment back to the US, 5) Only one power generator (i.e. no backup) was used to supply the entire LDB facility with power for the first two to three weeks of our stay even through the lack of backup was pointed out as a problem and multiple generators were available on-site, 6) The heater for the Payload Integration Garage broke down several times during the first half of the season resulting in a significant drop in interior temperature rendering certain kinds of activities very difficult or impossible, 7) During the first portion of the season this same heater was not fueled frequently enough, resulting in the heater running out of fuel during a condition 1 storm in November, 00 and creating a potentially very dangerous situation, 8) During November, 00 the only water supply on-site in the LDB galley became tainted with bacteria and algae. No snow melter or other backup system was installed and it took a week to bring the water supply back on-line. After this incident an emergency backup tank was finally installed, 9) Water delivery to the LDB site from McMurdo was not sufficient for our needs and the science groups had to resort to cycling 20 gallon containers to McMurdo ourselves. Again a snow melter, which was suggested as a solution but not provided, would have helped us conserve potable water. In short my impression is that the McMurdo administration viewed the LDB operation at Willy Field as a McMurdo suburb, yet their logistical problem imply that it should be treated as a fully supplied field camp.

The most memorable incident occurred in January, 2001 when the ATIC balloon flight was nearing the end of its flight. We received great resistance from the McMurdo administration to provide C-130 underflights to support mission termination and Twin Otter support for payload recovery. In fact, following ATIC termination I received an e-mail from Brian Stone stating that there were "no plans to recover either ATIC or TopHat this season" regardless of the fact that at least partial recovery of ATIC was required for minimum success was stated by me in the presence of Dennis Peacock a year earlier, fixed wing support was included in our SIP, I repeated this statement during a McMurdo public science presentation in November, 2000 in the presence of then NSF Representative and that this kind of support has been required by the LDB program for all the years they have been operating at Willy Field.

As a result of the Stone e-mail I was compelled to report to my NASA administrator that without recovery the ATIC mission would need to be declared a complete failure. I should emphasize that at no time up to ATIC termination did I receive any indication that the fixed wing support would not be there for recovery and, in fact, if I had I would not have authorized the ATIC launch in the first place. As I also understand, Stephen Peterzen the LDB Campaign Leader began weeks earlier to send our requirements for C-130 and Twin Otter support during termination and recovery through proper channels, but had received no firm statement about this support. Mr. Stone's immediate response to my message to NASA was to inform me that while the fixed wing requirement was in the SIP it was not included in the Research Support Plan (RSP), which was "made available in late August". In fact, an RSP was never sent to the LDB experimenters and I did not see the RSP until this problem came up. As I recall, no LDB personnel saw the RSP much earlier than I did. This problem was eventually resolved, and ATIC was finally recovered almost two weeks after the flight was terminated causing the ATIC personnel to have to stay on the ice that much longer.

This incident indicates to me that there is a serious lack of communication between NSF, RPS and the science groups about what the experiment requirements are and what services will be available. It also indicates the relative lack of understanding about the LDB program and an inflexible attitude on the part of the McMurdo administration. As a first time visitor to Antarctica my inexperience left me unprepared for the numerous support, logistical and bureaucratic problems I had to deal with. If it was not for the presence of someone like Steven Peterzen who was experienced in the McMurdo system and was a strong advocate of the LDB program, it is very

Project 8

The only problems we had last year were weather delays getting to Antarctica and out to our field site. However, our team was well-prepared for such delays. The availability of office space in Crary lab during this time allowed us to work on software we needed to analyze the data we were about to acquire at Siple Dome. So Even though we listed 4 bad weather days, we were in fact quite productive during each of these days. I would say we had zero non-productive days. In the end, we accomplished every one of our objectives. Much of this was due to the excellent support we received from Raytheon. Keep up the good work.

Project 9

Outstanding deployment. Great help from everyone in McMurdo and at SDM.
Medical and travel prior to deployment were a nightmare!

McMurdo & USCG

Table 12 Describe USAP Support

Project	1	We accomplished all that we set out to do. That is the best measure of the generally excellent support we received. Obviously, the conditions are trying and there is a lot being attempted in a confined time window for USAP in general. Bravo. On the other hand, compared to the previous 4 summer seasons, we needed to be more on our toes to not get buried in what sometimes felt like chaos. More than ever, it seemed, I (PI) had to be in McMurdo to arrange things, rather than doing it from the field (as in the past). Don't know, a lot more going on this season? We did get great service, but didn't appreciate the sermons received, while I felt was not warranted (but may have applied more to beakers in general). Don't know. Bad days happen. Here are some thoughts: (1) PIs need to be told in April before filling out SIPs that, e.g., there will be only 2 helos available Monday-Wednesday for most of season, because the others are being dedicated for work somewhere (i.e., Darwin). More or less because of this there was one camp that I deleted owing to the perceived hassle pending/looming. I believe such things are known by USAP before this April. (2) It would help if Mac Ops folks were more familiar with what goes on at small field camps: since they are "Field Party Communication". For example, what is a sling load - it's basics - to facilitate translation of coms for Helo Ops to Field camps, etc. (3) Helo Ops, as in past years, sought information from field camps on a daily basis, rather than, as this year, it was a "you-call-us-with-your-needs-we'll-see-what-we-can-do" sort of thing. I think, their way, efficiency of flights could have been improved; and folks in the field would have a better idea of what may be involved in their request.

Palmer

Project	1	-the seawater system and environmental rooms are in need of a serious refurbishing -travel support was dismal at the start of the season, but did improve; the system is very time consuming

R/V LMG

Project	1	-the response to the SIP should arrive 6-8 weeks prior to deployment; LTER RSP arrived 21 Dec for a cruise that was sup--- This caused several supply issues and frantic last minute purchases. -overall the support at sea is excellent, whereas the support from the home office is often not timely (travel horrors) suggest that the same POC be assigned to the cruise for the entire time, no handoffs. -the MPC was great, but his time was consumed with paper work - this did interfere with his ability to share his experience with the relatively new MTs - suggest that while working an oceanographic cruise the MPC should have the time to focus on that cruise and no on Denver paper
Project	2	Overall I rate the support from Raytheon personnel as excellent. My Good rating reflects the capability of the field research vessel. Because the LM Gould is a relatively small ship, it is limited in space availability for science and it's ability to handle poor weather conditions. I lost several science days and experiments because the only access to the aquarium room is from outside on the main deck. When the main deck was closed due to bad weather, I no longer had access to my experiments. The weather during this autumn cruise was challenging: we had sustained high winds for most of the cruise (>25-30 knots for ca. 40% of the time). Most equipment (acoustic towed fish, net, etc.) could not be safely deployed off the Gould in 25-30 knot winds. Also because of the small size of the Gould and because it is the support vessel for Palmer Station, there was no available space on the vessel to store our packing boxes containing extra supplies. Some investigators ran short of supplies, however, most were able to borrow the necessary items. I just reread what I wrote late last night. It sounds harsher than I intended. The Gould was no doubt built for a specific purpose. I suppose primarily to service Palmer Station and to conduct science for relatively small groups of scientists in the Peninsula region during the summer. The Gould is probably a good platform for that level of activity. Certainly the Gould's crew worked hard to meet the needs of the GLOBEC program. Based on my own science interest and discussions with others, however, I think there is a need for a second larger vessel with ice breaking capability in the Antarctic Program. My concerns about the Gould's ability to support science for a wider range of activities include stability issues, ability to work in marginal weather which is common at high latitudes, ability/safety issues in relation to sea ice, and limitation of ship laboratory/working space for the number of scientists it can carry. In addition, the ice reamers increase the amount and width of turbulence alongside the ship so that our ability to collect high quality acoustic data from the towed HTI system was reduced. There are other noise interference issues with both the Palmer and the Gould, but the Gould had this additional problem as well.
Project	3	Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. The captain and crew were very cooperative and the MPC and MST's were terrific. It couldn't have been better. Keep up the good work.
Project	4	Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. We only had minor equipment problems (the seismic system and one CTD termination failed) and both of these equipment failures were repaired in t a timely manner. The captain and crew were very cooperative and the MPC and MST's were terrific. It couldn't have been better. Keep up the good work.

Table 12 Describe USAP Support

McMurdo

Project	1	Due to lack of available equipment and delayed contractor start on one of my projects, it was scaled back to 1/10 its original plan. Being a "T" event, I essentially have a contract with NSF to produce a product on a strict timeline. In my case this relied on the use/support of heavy equipment and operators. This was made clear in my SIP. Hearing on feedback on my SIP, I assumed that the tasks that needed to be done in order for me to fill my obligation were happening at the times they were prescribed to. Upon arrival, only then did I learn that nothing had been done and that essentially no resources were available to do what I was contracted to do. The SIP process needs to be interactive and needs to involve the departments whose support will be required - not just a generic POC. Additionally, the OPP tasking for a T-event (at least in my case) needs to be better compared with contractor support capacity before it becomes finalized. This will reduce surprises such as I experienced and less burden on support staff.
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In fact, following ATIC termination I received an e-mail from Brian Stone stating that there were “no plans to recover either ATIC or TopHat this season” regardless of the fact that at least partial recovery of ATIC was required for minimum success was stated by me in the presence of Dennis Peacock a year earlier, fixed wing support was included in our SIP, I repeated this statement during a McMurdo public science presentation in November, 2000 in the presence of then NSF Representative and that this kind of support has been required by the LDB program for all the years they have been operating at Willy Field. As a result of the Stone e-mail I was compelled to report to my NASA administrator that without recovery the ATIC mission would need to be declared a complete failure. I should emphasize that at no time up to ATIC termination did I receive any indication that the fixed wing support would not be there for recovery and, in fact, if I had I would not have authorized the ATIC launch in the first place. As I also understand, Stephen Peterzen the LDB Campaign Leader began weeks earlier to send our requirements for C-130 and Twin Otter support during termination and recovery through proper channels, but had received no firm statement about this support. Mr. Stone’s immediate response to my message to NASA was to inform me that while the fixed wing requirement was in the SIP it was not included in the Research Support Plan (RSP), which was “made available in late August”. In fact, an RSP was never sent to the LDB experimenters and I did not see the RSP until this problem came up. As I recall, no LDB personnel saw the RSP much earlier than I did. This problem was eventually resolved, and ATIC was finally recovered almost two weeks after the flight was terminated causing the ATIC personnel to have to stay on the ice that much longer. This incident indicates to me that there is a serious lack of communication between NSF, RPS and the science groups about what the experiment requirements are and what services will be available. It also indicates the relative lack of understanding about the LDB program and an inflexible attitude on the part of the McMurdo administration. As a first time visitor to Antarctica my inexperience left me unprepared for the numerous support, logistical and bureaucratic problems I had to deal with. If it was not for the presence of someone like Steven Peterzen who was experienced in the McMurdo system and was a strong advocate of the LDB program, it is very likely that we would not have been able to successfully complete our scientific project.
Project	8	The only problems we had last year were weather delays getting to Antarctica and out to our field site. However, our team was well-prepared for such delays. The availability of office space in Crary lab during this time allowed us to work on software we needed to analyze the data we were about to acquire at Siple Dome. So Even though we listed 4 bad weather days, we were in fact quite productive during each of these days. I would say we had zero non-productive days. In the end, we accomplished every one of our objectives. Much of this was due to the excellent support we received from Raytheon. Keep up the good work.
Project	9	Outstanding deployment. Great help from everyone in McMurdo and at SDM. Medical and travel prior to deployment were a nightmare!

Table 12 Describe USAP Support

McMurdo & USCG

Project 1

We accomplished all that we set out to do. That is the best measure of the generally excellent support we received. Obviously, the conditions are trying and there is a lot being attempted in a confined time window for USAP in general. Bravo.
On the other hand, compared to the previous 4 summer seasons, we needed to be more on our toes to not get buried in what sometimes felt like chaos. More than ever, it seemed, I (PI) had to be in McMurdo to arrange things, rather than doing it from the field (as in the past). Don't know, a lot more going on this season?
We did get great service, but didn't appreciate the sermons received, while I felt was not warranted (but may have applied more to beakers in general). Don't know. Bad days happen.
Here are some thoughts: (1) PIs need to be told in April before filling out SIPs that, e.g., there will be only 2 helos available Monday-Wednesday for most of season, because the others are being dedicated for work somewhere (i.e., Darwin). More or less because of this there was one camp that I deleted owing to the perceived hassle pending/looming. I believe such things are known by USAP before this April. (2) It would help if Mac Ops folks were more familiar with what goes on at small field camps: since they are "Field Party Communication". For example, what is a sling load - it's basics - to facilitate translation of coms for Helo Ops to Field camps, etc. (3) Helo Ops, as in past years, sought information from field camps on a daily basis, rather than, as this year, it was a "you-call-us-with-your-needs-we'll-see-what-we-can-do" sort of thing. I think, their way, efficiency of flights could have been improved; and folks in the field would have a better idea of what may be involved in their request.

Palmer

Project 1

-the seawater system and environmental rooms are in need of a serious refurbishing
-travel support was dismal at the start of the season, but did improve; the system is very time consuming

R/V LMG

Project 1

-the response to the SIP should arrive 6-8 weeks prior to deployment; LTER RSP arrived 21 Dec for a cruise that was sup--- This caused several supply issues and frantic last minute purchases.
-overall the support at sea is excellent, whereas the support from the home office is often not timely (travel horrors) suggest that the same POC be assigned to the cruise for the entire time, no handoffs.
-the MPC was great, but his time was consumed with paper work - this did interfere with his ability to share his experience with the relatively new MTs - suggest that while working an oceanographic cruise the MPC should have the time to focus on that cruise and not on Denver paper

Project 2

Overall I rate the support from Raytheon personnel as excellent. My Good rating reflects the capability of the field research vessel. Because the LM Gould is a relatively small ship, it is limited in space availability for science and it's ability to handle poor weather conditions. I lost several science days and experiments because the only access to the aquarium room is from outside on the main deck. When the main deck was closed due to bad weather, I no longer had access to my experiments. The weather during this autumn cruise was challenging: we had sustained high winds for most of the cruise (>25-30 knots for ca. 40% of the time). Most equipment (acoustic towed fish, net, etc.) could not be safely deployed off the Gould in 25-30 knot winds. Also because of the small size of the Gould and because it is the support vessel for Palmer Station, there was no available space on the vessel to store our packing boxes containing extra supplies. Some investigators ran short of supplies, however, most were able to borrow the necessary items.
I just reread what I wrote late last night. It sounds harsher than I intended. The Gould was no doubt built for a specific purpose. I suppose primarily to service Palmer Station and to conduct science for relatively small groups of scientists in the Peninsula region during the summer. The Gould is probably a good platform for that level of activity. Certainly the Gould's crew worked hard to meet the needs of the GLOBEC program. Based on my own science interest and discussions with others, however, I think there is a need for a second larger vessel with ice breaking capability in the Antarctic Program. My concerns about the Gould's ability to support science for a wider range of activities include stability issues, ability to work in marginal weather which is common at high latitudes, ability/safety issues in relation to sea ice, and limitation of ship laboratory/working space for the number of scientists it can carry. In addition, the ice reamers increase the amount and width of turbulence alongside the ship so that our ability to collect high quality acoustic data from the towed HTI system was reduced. There are other noise interference issues with both the Palmer and the Gould, but the Gould had this additional problem as well.

Project 3

Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. The captain and crew were very cooperative and the MPC and MST's were terrific. It couldn't have been better. Keep up the good work.

Project 4

Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. We only had minor equipment problems (the seismic system and one CTD termination failed) and both of these equipment failures were repaired in t a timely manner. The captain and crew were very cooperative and the MPC and

MST's were terrific. It couldn't have been better. Keep up the good work.

Project 5 Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. The captain and crew were very cooperative and the MPC and MST's were terrific. It couldn't have been better. Keep up the good work.

Project 6 Field support both at Palmer Station and on board ship was excellent. All necessary equipment was on board. We only had minor equipment problems (the seismic system and one CTD termination failed) and both of these equipment failures were repaired in a timely manner. The captain and crew were very cooperative and the MPC and MST's were terrific. It couldn't have been better. Keep up the good work.

R/V NBP

Project 1 see outbrief

Project 2 Several problems occurred which did not necessarily result in lost or non-productive days. The primary problem was that this large interdisciplinary project required two working ships within the study area. The NB Palmer is an excellent platform for conducting Antarctic research. The second ship, the LM Gould, was inadequate for both the April-June and the July-September cruises. I would like to clarify that the ECO crew and Raytheon personnel on the Gould were excellent and supportive, however, the ship was not capable of working in the demanding Antarctic environment. During the April-June Cruise we experienced sustained high winds and seas, in which the Gould could not operate equipment over the side. In addition, I used the aquarium room for physiology experiments. Because this space only has access from outside on the main deck, I was unable to complete experiments and missed time points when the decks were closed for heavy seas. During the winter cruise, the Gould experienced considerable difficulty in maneuvering through sea ice. For these reasons, I would like to recommend the Antarctic Program consider initiating plans for a replacement vessel that would be capable of supporting Antarctic science during all seasons.
One problem with the Palmer worth mentioning is the flow-through sea water system. This system repeatedly froze up during the winter cruise despite the valiant efforts of engineers and marine techs. As I understand it, slush (from the ship breaking through sea ice) enters the sea water system and plugs up the pipes at any one of many different sites. During one particularly troublesome period, the temperature was raised in the aquarium room and I lost a temperature-sensitive experiment. I recommend that some solution to this problem be explored.

Table 12 Describe USAP Support

Project	3	Travel: Travel personnel cancelled participant's return tickets while they were at sea without notifying grantee, refused to respond in a timely manner when grantee discovered problem (through a travel agent contacted by the grantee), were extremely rude and unhelpful to latter travel agent who was trying to assist grantee with solving the cancelled ticket problem, (agent is willing to provide written statement of treatment by RPS travel office), did not respond to MPC requests for information on cancelled or reinstated tickets, told grantee that they would have to go to the airport in foreign port and deal with airlines directly to obtain tickets, and provided no RPS personnel assistance with the matter when ship arrived in port, even though a U.S. RPS representative, J. Holik, met the ship and indicated that he was fully aware of the problem-but disappeared and never offered any help. Suggested solution: Allow grantees to make their own travel arrangements on U.S. carriers after medical approval received; have grantees request travel funds in their budgets as they do with other NSF research programs. MPC: Apparently never provided any of the FOUR copies of the detailed contents and shipping list provided to him by the grantee (with all items and values listed) of grantee's scientific shipping container to either the new MPC who took over when the ship arrived in Cape Town (when NBP01-01 MPC left the ship) and who was to be responsible for shipping from Punta Arenas, or to L. DeGalen in the Port Hueneme shipping facility (DeGalen had NO information on what was coming and grantee ended up faxing the list to him after arriving back in US). It appears that the Chilean customs people were also not provided with the container contents lists/manifest in a timely manner as the container was held up in Chile for several weeks after the intended date of shipment and was completely dismantled and repacked very badly (see below) as a result. MPC did not take care of return shipping of critical samples for which all the paperwork was provided by the grantee well in advance of their departure from the ship to the extent that the MPC e-mailed the grantee 3 times after the grantee had arrived back in the US requesting the same shipping info. that had been provided to him over a month previously on the shipping forms that the grantee completed when still onboard the ship. MPC stated and completed RPS shipping paperwork indicated that scientific samples could be shipped cold (NOT frozen) to the US, but grantee was told over a month after returning to US (with no samples shipped yet) that this was not possible. Then the grantee was told by an RPS individual who took over the shipping problems from the NBP01-01 MPC, that a refrigerated container did go to the US but "somehow" the grantee's single cooler of samples was not placed in it. Result was that critical samples sat in Punta Arenas (in what type of temperatures no one could provide) for over a month and the research program on the US end was held up substantially. Suggested solution: MPC for a project should see it through-i.e., through the shipping of gear, samples, etc. back to U.S. Hand-over of this responsibility to another MPC the moment the ship hits the dock obviously does not work for obvious reasons (new MPC not familiar with just completed program, etc.) and not-so-obvious reasons (old MPC in big hurry to leave does not provide all necessary and pertinent info. to new MPC to insure that shipping etc. of completed project's materials proceeds with minimal hassles). MPC should be acutely aware of all shipping pit-falls, etc. and provide this info/advice to the grantees. Marine Sci. Tech.: Did not know nor attempt to learn how a number of lab instruments in the tech. room/office actually worked and that were checked out the grantee. Mar. Sci. Tech. provided conflicting shipping information from that provided by the MPC, and both MPC and Marine Tech. indicated that samples could be shipped in a particular manner which turned out to be NOT recommended and difficult to accomplish-after the grantee left the ship. Suggested solution: Marine Science Techs who are more concerned with making sure that the labs and equipment are all in working order (what good is an inventory of laboratory instruments that the Marine Sci.. Tech does not know how they operate. etc.?) and there needs to be better communication between the MPC and the Marine Sci. tech regarding info. which they give out to the grantees and what the grantees may require at sea, etc. We all filled out a lot of forms before the cruise and during the cruise, but it does not appear after-the-fact that the Mar. Sci. tech. or the MPC paid much attention to them-so what was the point? AGUNSA: Completely dismantled and repacked an extremely well-packed container of equipment and crates in a very poor manner: none of the creates were tied down as they were when packed by the grantees, instruments that were clearly labeled "fragile, do not stack on top, and keep upright" were shoved to the back of the container and turned on their sides or on end (which caused some structural damage to the gear), heavy crates were piled on top of fragile items resulting in crates and items with minor to moderate physical damage, and extremely heavy, space-consuming items were placed into container that were not to be returned to the US (i.e., 3000 m of used/trashed/spent mooring wire which grantee told MPC could be disposed of in Punta Arenas and was definitely not to be returned to the US. MPC requested what should be done with the mooring wire, grantee suggested that it might be disposed on in Chile, MPC agreed that this was reasonable, and grantee thus never placed the wire on the container manifest/shipping list). Suggest solution: MUCH better communication between the MPC responsible for the project and AGUNSA personnel regarding the shipping of items/samples/gear through Chile-how else are they to know what to do with items that arrive if they receive nothing or minimal info. from the MPC? **Grantee would like to acknowledge, in contrast to the above, the excellent job by another MPC (John Evans) who was assigned to the project for the 1998-99 and 1999-2000 summer seasons. Additionally, when the grantee and the NBP01-01 MPC were not able to get anywhere with the RPS travel department as described above while they were at sea, the grantee contacted Evans for assistance which he promptly provided, even though he was not assigned to the project. For this and many other reasons for which there is not room or time enough to go into, John Evans should be commended-he is excellent and clearly cares about the success of the U.S. polar research programs and is genuinely concerned about the quality of the services provided by RPS and the ability of RPS to do their job and do it well in terms of supporting the Antarctic program. Additionally, several others who are

Table 12 Describe USAP Support

clearly professional, are significant assets to RPS, and take their responsibilities seriously as opposed to the vast majority of the individuals described above, are Lee DeGalen and Jackie Samuel in Port Hueneme and Brian Borden in Denver who did their jobs well, in addition to cleaning up the messes left behind by some of the people above who clearly did not do their jobs. Based on her experience, the latter is of substantial concern to the grantee not only as a polar researcher and recipient of NSF funds from several different programs, but also as a taxpayer whose taxes go to support such basic research programs as well as the contracted services provided to these research programs by companies such as RPS.
**The Captain and crew of the N.B. Palmer could not be any more professional or enjoyable to work with and go to sea with-they are truly exemplary and represent one of the greatest components of the U.S. Antarctic program.

R/V, Field Camps

Project 1 In general, the support from the US team, particularly John Evans, was superb. We were very well taken care of the Chilean and Argentine support persons were also very efficient and helpful. The sole complaint we had was that the outer win……

Project 2 That said, a real measure of the quality of support is our satisfaction at the end of the season and whether or not we ended up where we intended to be. I have highest praise for the work of John Evans and the Captain, crew, and support people on the LMG. We had a rather unusual project and some rather bad weather. They got us there and back on time and they made it look easy.

South Pole

Project 1 As discussed at our outbriefing (with Eivind Jensen, Katie Jensen and Julie Palais), the time constraints for science teams at Pole forced us to attempt to complete our project on a schedule that had absolutely no time built in for contingencies. Thus, when we lost time for any reason, our science program was compromised. We knew this as a risk from the beginning of our scheduling session, but were given no alternative. These limits were not the fault of RPSC, but nonetheless, they significantly reduced the productivity and scientific value of our field season.

Project 2 We had planned a relatively modest field season compared to the year before. All went quite well except that space in ARO seemed to be somewhat over-committed and there were a large number of weather delays this year.

Project 3 Liquid helium continues to be our #1 support priority. Bringing the Wessington dewars up to spec is crucial to the 2002 winterover.